

Math 7 Unit 1 Test

Multiple Choice

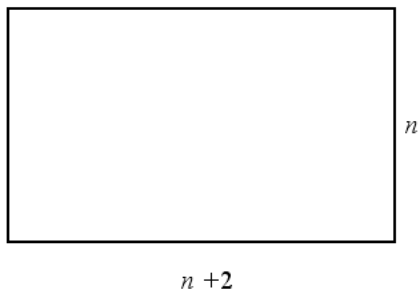
Identify the choice that best completes the statement or answers the question.

- ____ 1. Which number is divisible by 4 **and** by 5?
210, 630, 420, 315
a. 315 b. 420 c. 210 d. 630
- ____ 2. Which number is divisible by 3?
127, 124, 123, 130
a. 124 b. 127 c. 130 d. 123
- ____ 3. Which number is divisible by 9?
244, 242, 252, 240
a. 252 b. 244 c. 240 d. 242
- ____ 4. Evaluate the expression by replacing a with 12.
 $a + 5$
a. 17 b. 60 c. 7 d. 3

- ____ 5. If n represents any term number, write a relation for the term.

Term Number		1	2	3	4	5	6
Term		11	22	33	44	55	66

- a. $11n$ b. $2n + 11$ c. $2n$ d. $n + 11$
- ____ 6. There are n students in a class. Write a relation for the total number of crayons if each student is given 13 crayons.
a. $13n + 13$ b. $n + 13$ c. $13n$ d. $\frac{n}{13}$
- ____ 7. Write a relation for the perimeter of the rectangle with length $(n + 2)$ cm and width n cm.



- a. $(4n + 2)$ cm b. $(2n + 2)$ cm c. $n(n + 2)$ cm d. $(4n + 4)$ cm
- ____ 8. Each ticket for a ride at the fair costs \$4. There are n students in the group and each student buys 9 tickets. Write a relation for the total cost of tickets for the group.
a. $\$13n$ b. $\$9n$ c. $\$36n$ d. $\$(n + 13)$

_____ 9. Complete the table.

Input p	1	2	3	4	5
Output $p + 6$					

a.

Input p	1	2	3	4	5
Output $p + 6$	6	7	8	9	10

b.

Input p	1	2	3	4	5
Output $p + 6$	7	12	18	24	30

c.

Input p	1	2	3	4	5
Output $p + 6$	6	12	18	24	30

d.

Input p	1	2	3	4	5
Output $p + 6$	7	8	9	10	11

_____ 10. Complete the table.

Input p	1	2	3	4	5
Output $p + 21$					

a.

Input p	1	2	3	4	5
Output $p + 21$	22	42	63	84	105

b.

Input p	1	2	3	4	5
Output $p + 21$	22	23	24	25	26

c.

Input p	1	2	3	4	5
Output $p + 21$	21	42	63	84	105

d.

Input p	1	2	3	4	5
Output $p + 21$	21	22	23	24	25

11. Use algebra. Write a relation for the Input/Output table.

Input n	1	2	3	4	5
Output	20	40	60	80	100

a. $19n$

b. $n + 19$

c. $20 + n$

d. $20n$

12. Complete the Input/Output table.

Input x	1	2	3	4	5
Output $x + 6$					

a.

Input x	1	2	3	4	5
Output $x + 6$	7	8	9	10	11

b.

Input x	1	2	3	4	5
Output $x + 6$	12	18	24	30	36

c.

Input x	1	2	3	4	5
Output $x + 6$	6	12	18	24	30

d.

Input x	1	2	3	4	5
Output $x + 6$	6	7	8	9	10

____ 13. Complete the Input/Output table.

Input q	1	2	3	4	5
Output $13q - 7$					

a.

Input q	1	2	3	4	5
Output $13q - 7$	6	19	32	45	58

b.

Input q	1	2	3	4	5
Output $13q - 7$	13	7	8	9	10

c.

Input q	1	2	3	4	5
Output $13q - 7$	19	30	41	52	63

d.

Input q	1	2	3	4	5
Output $13q - 7$	19	32	45	58	71

____ 14. Complete the Input/Output table.

Input x	1	2	3	4	5
Output $15 - 2x$					

a.

Input x	1	2	3	4	5
Output $15 - 2x$	13	11	9	7	5

b.

Input x	1	2	3	4	5
Output $15 - 2x$	15	12	10	8	6

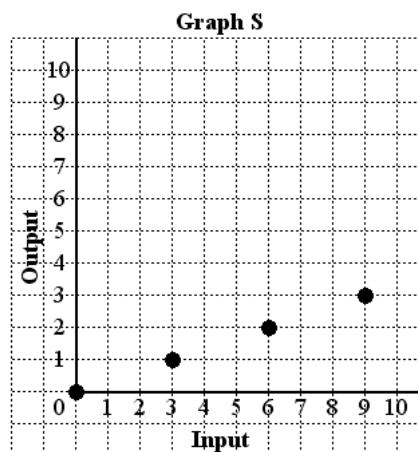
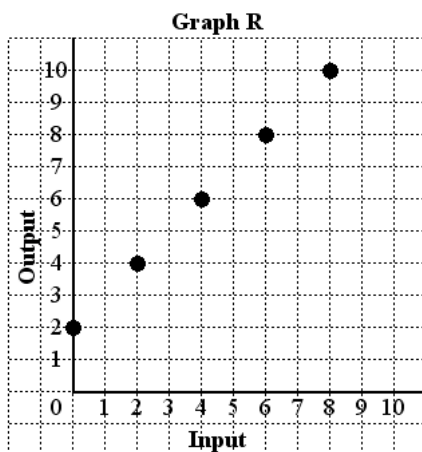
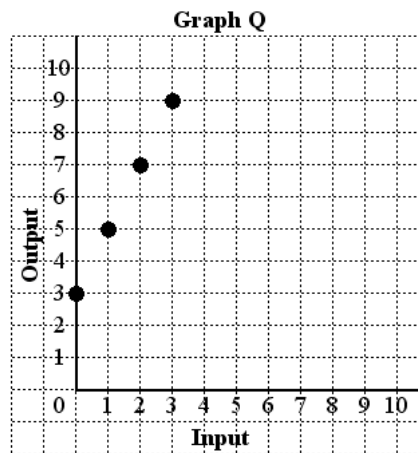
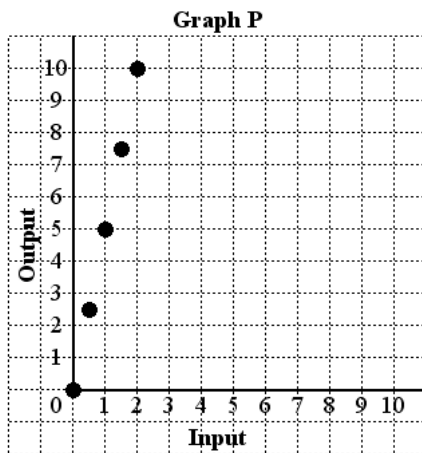
c.

Input x	1	2	3	4	5
Output $15 - 2x$	13	11	9	7	5

d.

Input x	1	2	3	4	5
Output $15 - 2x$	11	9	7	5	3

15. Which graph shows how $2x + 3$ is related to x ?



a. Graph P

b. Graph R

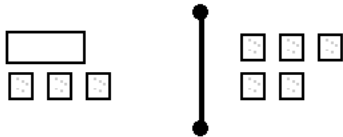
c. Graph S

d. Graph Q

16. A coach has 16 granola bars and gives 2 bars to each player. Write a relation to show how the number of granola bars that remain is related to the number of players, m .

- a. $14m$ b. $16 - 2m$ c. $\frac{14}{m}$ d. $\frac{16}{2m}$

- _____ 17. Write an equation for the sentence.
Eleven more than a number is 18.
a. $n - 11 = 18$ b. $11 - n = 18$ c. $n + 11 = 18$ d. $11n = 18$
- _____ 18. Write an equation for the sentence.
A number divided by 3 is 5.
a. $n - 3 = 5$ b. $\frac{n}{3} = 5$ c. $\frac{3}{n} = 5$ d. $3 - n = 5$
- _____ 19. Write an equation for "I subtract 13 from a number. The answer is 23."
a. $\frac{n}{13} = 23$ b. $13 - n = 23$ c. $n + 13 = 23$ d. $n - 13 = 23$
- _____ 20. Write an equation for the sentence.
Two added to 7 times a number is 79.
a. $2 - 7x = 79$ c. $2 + 7x = 79$
b. $2x = 79 + 7$ d. $2x - 7 = 79$
- _____ 21. Write an equation for "I multiply a number by 4, then add 5. The answer is 17."
a. $20n = 17$ b. $9n = 17$ c. $4n + 5 = 17$ d. $5n + 4 = 17$
- _____ 22. Use tiles to solve the equation.
 $5 + x = 15$
a. 3 b. 20 c. 75 d. 10
- _____ 23. Use tiles to solve the equation.
 $2 + x = 10$
a. 6 b. 8 c. 5 d. 12
- _____ 24. Write an equation for the sentence.
The sum of 11 and a number is 22.
a. $11 - x = 22$ b. $11x = 22$ c. $11 + x = 22$ d. $22 + x = 11$
- _____ 25. Let one white square represent +1 and one white rectangle represent x .
Solve the equation modelled by this set of tiles.



- a. $x = 2$ b. $x = 1$ c. $x = 7$ d. $x = 3$

Math 7 Unit 1 Test Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1 DIF: Moderate REF: 1.1 Patterns in Division
LOC: 7.N1 TOP: Number KEY: Conceptual Understanding
2. ANS: D PTS: 1 DIF: Easy REF: 1.2 More Patterns in Division
LOC: 7.N1 TOP: Number KEY: Procedural Knowledge
3. ANS: A PTS: 1 DIF: Easy REF: 1.2 More Patterns in Division
LOC: 7.N1 TOP: Number KEY: Procedural Knowledge
4. ANS: A PTS: 1 DIF: Easy REF: 1.3 Algebraic Expressions
LOC: 7.PR5 TOP: Patterns and Relations (Variables and Equations)
KEY: Procedural Knowledge
5. ANS: A PTS: 1 DIF: Easy REF: 1.4 Relationships in Patterns
LOC: 7.PR1 TOP: Patterns and Relations (Patterns) KEY: Procedural Knowledge
6. ANS: C PTS: 1 DIF: Easy REF: 1.4 Relationships in Patterns
LOC: 7.PR1 TOP: Patterns and Relations (Patterns) KEY: Conceptual Understanding
7. ANS: D PTS: 1 DIF: Moderate REF: 1.4 Relationships in Patterns
LOC: 7.PR1 TOP: Patterns and Relations (Patterns) KEY: Conceptual Understanding
8. ANS: C PTS: 1 DIF: Moderate REF: 1.4 Relationships in Patterns
LOC: 7.PR1 TOP: Patterns and Relations (Patterns) KEY: Conceptual Understanding
9. ANS: D PTS: 1 DIF: Easy REF: 1.5 Patterns and Relationships in Tables LOC: 7.PR2 |7.PR5
TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Procedural Knowledge
10. ANS: B PTS: 1 DIF: Easy REF: 1.5 Patterns and Relationships in Tables LOC: 7.PR2 |7.PR5
TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Procedural Knowledge
11. ANS: D PTS: 1 DIF: Easy REF: 1.5 Patterns and Relationships in Tables LOC: 7.PR2 |7.PR5
TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Conceptual Understanding
12. ANS: A PTS: 1 DIF: Easy REF: 1.6 Graphing Relations
LOC: 7.PR1|7.PR2|7.PR5
TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Procedural Knowledge
13. ANS: A PTS: 1 DIF: Moderate REF: 1.6 Graphing Relations
LOC: 7.PR1|7.PR2|7.PR5
TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Procedural Knowledge
14. ANS: A PTS: 1 DIF: Moderate REF: 1.6 Graphing Relations
LOC: 7.PR1|7.PR2|7.PR5
TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Procedural Knowledge
15. ANS: D PTS: 1 DIF: Moderate REF: 1.6 Graphing Relations
LOC: 7.PR1|7.PR2|7.PR5

- TOP: Patterns and Relations (Patterns, Variables and Equations)
KEY: Conceptual Understanding
16. ANS: B PTS: 1 DIF: Moderate REF: 1.6 Graphing Relations
LOC: 7.PR1 TOP: Patterns and Relations (Patterns) KEY: Problem-solving Skills
17. ANS: C PTS: 1 DIF: Easy REF: 1.7 Reading and Writing Equations
LOC: 7.PR3|7.PR6|7.PR7 TOP: Patterns and Relations (Variables and Equations)
KEY: Conceptual Understanding
18. ANS: B PTS: 1 DIF: Easy REF: 1.7 Reading and Writing Equations
LOC: 7.PR3|7.PR7 TOP: Patterns and Relations (Variables and Equations)
KEY: Conceptual Understanding
19. ANS: D PTS: 1 DIF: Easy REF: 1.7 Reading and Writing Equations
LOC: 7.PR3|7.PR6|7.PR7 TOP: Patterns and Relations (Variables and Equations)
KEY: Conceptual Understanding
20. ANS: C PTS: 1 DIF: Moderate REF: 1.7 Reading and Writing Equations
LOC: 7.PR3|7.PR7 TOP: Patterns and Relations (Variables and Equations)
KEY: Conceptual Understanding
21. ANS: C PTS: 1 DIF: Moderate REF: 1.7 Reading and Writing Equations
LOC: 7.PR3|7.PR7 TOP: Patterns and Relations (Variables and Equations)
KEY: Problem-solving Skills
22. ANS: D PTS: 1 DIF: Easy
REF: 1.8 Solving Equations Using Algebra Tiles LOC: 7.PR3|7.PR6|7.PR7
TOP: Patterns and Relations (Variables and Equations) KEY: Conceptual Understanding
23. ANS: B PTS: 1 DIF: Easy
REF: 1.8 Solving Equations Using Algebra Tiles LOC: 7.PR3|7.PR6|7.PR7
TOP: Patterns and Relations (Variables and Equations) KEY: Conceptual Understanding
24. ANS: C PTS: 1 DIF: Easy
REF: 1.8 Solving Equations Using Algebra Tiles LOC: 7.PR3|7.PR6|7.PR7
TOP: Patterns and Relations (Variables and Equations) KEY: Conceptual Understanding
25. ANS: A PTS: 1 DIF: Easy
REF: 1.8 Solving Equations Using Algebra Tiles LOC: 7.PR3|7.PR6|7.PR7
TOP: Patterns and Relations (Variables and Equations) KEY: Procedural Knowledge

Unit 2

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Let one white tile represent $+1$ and one black tile represent -1 .
You have 12 black tiles. What tiles do you need to model 0?
a. 11 black b. 12 white c. 12 black d. 11 white
- ____ 2. Let one white tile represent $+1$ and one black tile represent -1 .
You have 8 white tiles and 6 black tiles. What additional tiles do you need to model -2 ?
a. 4 white b. 2 black c. 4 black d. 2 white
- ____ 3. Let one white tile represent $+1$ and one black tile represent -1 .

What is the least number of tiles that you can remove to model -6 ?



- a. 0 black b. 6 black c. 6 white d. 0 white

4. Let one white tile represent $+1$ and one black tile represent -1 .
You have 17 white tiles and 17 black tiles.
What is the least number of tiles you can remove to model -10 ?
a. 10 white tiles b. 7 white tiles c. 10 black tiles d. 7 black tiles

5. Let one white tile represent $+1$ and one black tile represent -1 .
What sum does this set of tiles model? Write the addition equation.



- a. $(-6) + (+2) = -4$ c. $(+6) + (-2) = +4$
b. $(+6) + (+2) = +8$ d. $(+6) + (+2) = +8$

6. Let one white tile represent $+1$ and one black tile represent -1 .
What sum is modelled by 8 white tiles and 6 black tiles?
a. $+7$ b. $+14$ c. -2 d. $+2$

7. Add.
 $(+8) + (-4)$
a. $+12$ b. -4 c. $+4$ d. -12

8. Use coloured tiles to find the sum.
 $(-8) + (+5)$
a. -13 b. $+3$ c. $+13$ d. -3

9. Use coloured tiles to find the sum.
 $(+8) + (-4)$
a. -4 b. -12 c. $+4$ d. $+12$

10. Use coloured tiles to find the sum.
 $(+3) + (+6) + (-4)$
a. -9 b. $+1$ c. $+13$ d. $+5$

11. Write an addition equation modelled by the number line.



- a. $(+2) + (+3) = +5$ c. $(-3) + (+2) = +5$
b. $(+2) + (-3) = -1$ d. $(+2) + (-3) = +1$

12. Use a number line to add.

$$(+4) + (+15)$$

- a. +11 b. -19 c. -11 d. +19

_____ 13. Use a number line to add.

$$(+19) + (+11)$$

- a. +30 b. +8 c. +23 d. +34

_____ 14. Use a number line to add.

$$(+4) + (-10)$$

- a. +6 b. -14 c. +14 d. -6

_____ 15. Use a number line to add.

$$(-10) + (+1)$$

- a. +11 b. -11 c. -9 d. +9

_____ 16. The temperature is 14°C and drops 7°C .

Write an addition equation to calculate the final temperature. What is the final temperature?

- a. $(+14) + (-7) = +7$; 7°C c. $(+14) + (+7) = +21$; 21°C
b. $(+7) + (-14) = -7$; -7°C d. $(+7) + (+14) = +21$; 21°C

_____ 17. During the day the temperature was -2°C . At night, the temperature dropped 8°C .

What was the temperature at night?

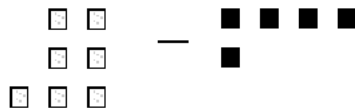
- a. -10°C b. 6°C c. -6°C d. 10°C

_____ 18. Let one white tile represent +1 and one black tile represent -1.

Use tiles to subtract.

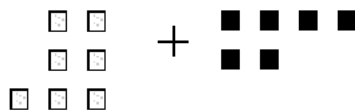
$$(+7) - (-5)$$

a.



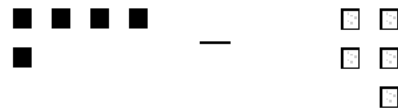
+12

b.



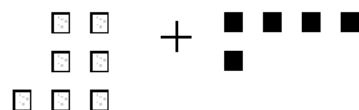
+13

c.



+12

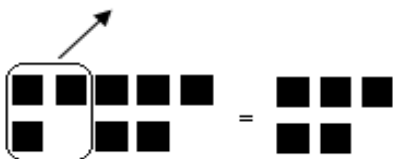
d.



+2

_____ 19. Let one black tile represent -1.

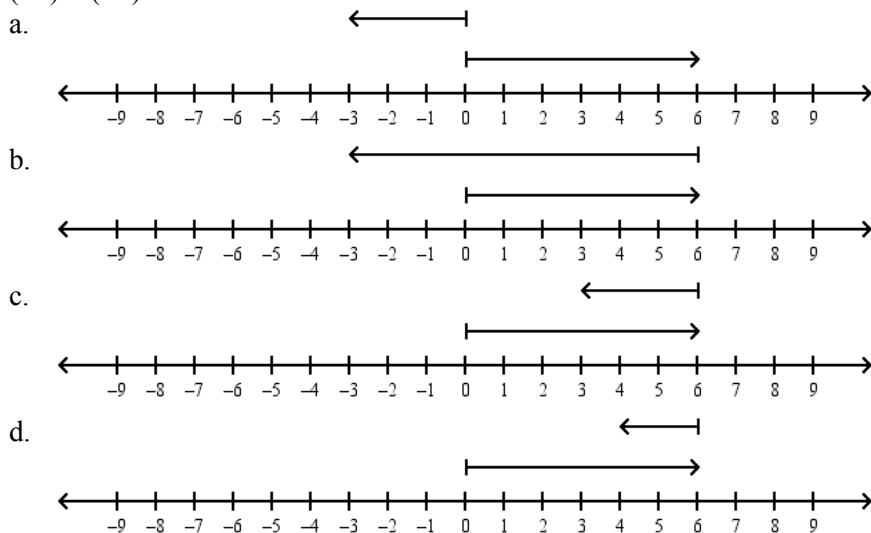
Write the subtraction equation modelled by this diagram.



- a. $(+8) - (+3) = +5$ c. $(+8) - (+3) = -5$
b. $(-8) - (-3) = -5$ d. $(-8) - (-3) = +5$

- ____ 20. Use tiles to subtract.
 $(+1) - (+13)$
 a. -14 b. $+12$ c. -12 d. $+14$
- ____ 21. Use tiles to subtract.
 $(+7) - (-2)$
 a. $+5$ b. -9 c. $+9$ d. -5
- ____ 22. Rewrite using addition.
 $(+5) - (-3)$
 a. $(+5) + (-3)$ b. $(+3) + (-2)$ c. $(+5) + (+3)$ d. $(+3) + (-5)$

- ____ 23. Use a number line to subtract.
 $(+6) - (+3)$



- ____ 24. Subtract.
 $(-22) - (+1)$
 a. -23 b. $+23$ c. -21 d. $+21$
- ____ 25. Use a number line to evaluate.
 $(+12) + (-3) - (+11)$
 a. -2 b. $+4$ c. $+20$ d. $+2$

Unit 2

Answer Section

MULTIPLE CHOICE

- | | | | | |
|-----|---|-------------------------------|-------------------------------|--|
| 1. | ANS: B | PTS: 1 | DIF: Easy | REF: 2.1 Representing Integers |
| | LOC: 7.N6 | TOP: Number | KEY: Conceptual Understanding | |
| 2. | ANS: C | PTS: 1 | DIF: Moderate | REF: 2.1 Representing Integers |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 3. | ANS: C | PTS: 1 | DIF: Moderate | REF: 2.1 Representing Integers |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 4. | ANS: A | PTS: 1 | DIF: Moderate | REF: 2.1 Representing Integers |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 5. | ANS: C | PTS: 1 | DIF: Easy | REF: 2.2 Adding Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Conceptual Understanding | |
| 6. | ANS: D | PTS: 1 | DIF: Easy | REF: 2.2 Adding Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Conceptual Understanding | |
| 7. | ANS: C | PTS: 1 | DIF: Moderate | REF: 2.2 Adding Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 8. | ANS: D | PTS: 1 | DIF: Moderate | REF: 2.2 Adding Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 9. | ANS: C | PTS: 1 | DIF: Moderate | REF: 2.2 Adding Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 10. | ANS: D | PTS: 1 | DIF: Difficult | REF: 2.2 Adding Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Procedural Knowledge | |
| 11. | ANS: B | PTS: 1 | DIF: Easy | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Conceptual Understanding | | |
| 12. | ANS: D | PTS: 1 | DIF: Moderate | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Procedural Knowledge | | |
| 13. | ANS: A | PTS: 1 | DIF: Moderate | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Procedural Knowledge | | |
| 14. | ANS: D | PTS: 1 | DIF: Moderate | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Procedural Knowledge | | |
| 15. | ANS: C | PTS: 1 | DIF: Moderate | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Procedural Knowledge | | |
| 16. | ANS: A | PTS: 1 | DIF: Moderate | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Problem-solving Skills | | |
| 17. | ANS: A | PTS: 1 | DIF: Moderate | |
| | REF: 2.3 Adding Integers on a Number Line | | | LOC: 7.N6 |
| | TOP: Number | KEY: Problem-solving Skills | | |
| 18. | ANS: A | PTS: 1 | DIF: Moderate | REF: 2.4 Subtracting Integers with Tiles |
| | LOC: 7.N6 | TOP: Number | KEY: Conceptual Understanding | |

19. ANS: B PTS: 1 DIF: Moderate REF: 2.4 Subtracting Integers with Tiles
 LOC: 7.N6 TOP: Number KEY: Conceptual Understanding
20. ANS: C PTS: 1 DIF: Moderate REF: 2.4 Subtracting Integers with Tiles
 LOC: 7.N6 TOP: Number KEY: Procedural Knowledge
21. ANS: C PTS: 1 DIF: Moderate REF: 2.4 Subtracting Integers with Tiles
 LOC: 7.N6 TOP: Number KEY: Procedural Knowledge
22. ANS: C PTS: 1 DIF: Easy
 REF: 2.5 Subtracting Integers on a Number Line LOC: 7.N6
 TOP: Number KEY: Conceptual Understanding
23. ANS: C PTS: 1 DIF: Moderate
 REF: 2.5 Subtracting Integers on a Number Line LOC: 7.N6
 TOP: Number KEY: Conceptual Understanding
24. ANS: A PTS: 1 DIF: Moderate
 REF: 2.5 Subtracting Integers on a Number Line LOC: 7.N6
 TOP: Number KEY: Procedural Knowledge
25. ANS: A PTS: 1 DIF: Difficult
 REF: 2.5 Subtracting Integers on a Number Line LOC: 7.N6
 TOP: Number KEY: Procedural Knowledge

Unit 3

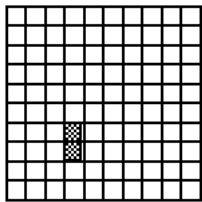
Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Write $\frac{6}{25}$ as a decimal.
 a. 1.2 b. 0.24 c. 1.8 d. 0.64
- ____ 2. Write $\frac{1}{4}$ as a decimal.
 a. 0.1 b. 0.25 c. $0.\overline{1}$ d. $0.2\overline{7}$
- ____ 3. Write $\frac{28}{15}$ as a decimal.
 a. $3.4\overline{6}$ b. $1.8\overline{6}$ c. $28.1\overline{3}$ d. $3.5\overline{3}$
- ____ 4. What is the least number in the set?
 $\frac{7}{8}, \frac{3}{4}, \frac{2}{3}, \frac{3}{5}$
 a. $\frac{7}{8}$ b. $\frac{3}{4}$ c. $\frac{2}{3}$ d. $\frac{3}{5}$
- ____ 5. What is the greatest number in the set?
 $\frac{3}{4}, \frac{4}{5}, \frac{9}{10}, \frac{7}{10}$
 a. $\frac{3}{4}$ b. $\frac{7}{10}$ c. $\frac{4}{5}$ d. $\frac{9}{10}$

- | | | | | | |
|-------|---|-------------------------|-------------------------|------------------------|------------------------|
| _____ | 6. Which of the following numbers is closest to 1?
1.35, 0.7, $1\frac{1}{5}$, $\frac{3}{4}$ | a. $1\frac{1}{5}$ | b. 0.7 | c. 1.35 | d. $\frac{3}{4}$ |
| _____ | 7. Add.
$6.068 + 1.286$ | a. 7.244 | b. 7.344 | c. 7.254 | d. 7.354 |
| _____ | 8. Multiply.
2.4×60 | a. 144 | b. 14.4 | c. 84 | d. 1440 |
| _____ | 9. Use Base Ten Blocks to find the product.
3.8×0.3 | a. 0.114 | b. 11.4 | c. 4.1 | d. 1.14 |
| _____ | 10. Use Base Ten Blocks to find the product.
0.4×0.9 | a. 0.36 | b. 3.6 | c. 1.3 | d. 0.036 |
| _____ | 11. What is the area of a rectangle 14.3 cm long and 3.2 cm wide? | a. 45.76 cm^2 | b. 4.576 cm^2 | c. 1.75 cm^2 | d. 17.5 cm^2 |
| _____ | 12. Estimate the quotient.
$57.7 \div 2.9$ | a. 19.9 | b. 1.99 | c. 0.199 | d. 199 |
| _____ | 13. Divide.
$0.36 \div 0.6$ | a. 6 | b. 0.6 | c. 0.006 | d. 0.06 |
| _____ | 14. Divide.
$64.71 \div 0.9$ | a. 71.9 | b. 7.19 | c. 0.719 | d. 719 |
| _____ | 15. Evaluate.
$3.1 + 4 \times 3.2$ | a. 15.9 | b. 22.72 | c. 39.68 | d. 22.32 |
| _____ | 16. Evaluate.
$25.7 - 5 \times 2.4$ | a. 49.68 | b. 37.7 | c. 13.7 | d. 66.82 |
| _____ | 17. Evaluate.
$2.8 + 4.4 \div 2$ | a. 6.16 | b. 3.6 | c. 5 | d. 2.2 |
| _____ | 18. Evaluate.
$4.9 \times 7 - 2.9 \times 2.6$ | a. 81.64 | b. 26.76 | c. 22.69 | d. 52.23 |

- ____ 19. Evaluate.
 $7.2 \times 19.5 \div 6$
 a. 134.4 b. 23.4 c. 10.45 d. 4.45
- ____ 20. Evaluate.
 $12.8 - 4.3 \div 0.5 + 2.3$
 a. 11.26 b. 6.5 c. 19.3 d. 3.04
- ____ 21. Write 6% as a decimal.
 a. 0.6 b. 0.006 c. 0.06 d. 6
- ____ 22. Write 0.9 as a percent.
 a. 9% b. 0.09% c. 90% d. 0.9%
- ____ 23. What fraction of the diagram is shaded? Write the fraction as a percent.



- a. $\frac{1}{10}$, 20% b. $\frac{1}{100}$, 10% c. $\frac{3}{20}$, 15% d. $\frac{2}{100}$, 2%
- ____ 24. Write 0.55 as a fraction in simplest form.
 a. $\frac{5}{9}$ b. $\frac{11}{20}$ c. $\frac{1}{2}$ d. $\frac{9}{5}$
- ____ 25. In the small country of Varia, a bill becomes law only if $\frac{2}{4}$ of the senators approve it.
 Write this fraction as a percent.
 a. 35% b. 30% c. 70% d. 50%
- ____ 26. Write $\frac{32}{50}$ as a percent.
 a. 32% b. 64% c. 2% d. 48%
- ____ 27. Calculate 50% of 46.
 a. 2.3 b. 230 c. 23 d. 0.96
- ____ 28. Calculate 58% of 18.
 a. 1.044 b. 0.76 c. 7.6 d. 10.44
- ____ 29. Find 21% of \$700.
 a. \$112.00 b. \$77.00 c. \$182.00 d. \$147.00
- ____ 30. The value of an appliance is estimated to decrease by 20% per year.
 The original price of an appliance is \$1000.
 What will be the value of the appliance after a year?
 a. \$980.00 b. \$720.00 c. \$800.00 d. \$200.00

Unit 3

Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1 DIF: Easy REF: 3.1 Fractions to Decimals
LOC: 7.N4 TOP: Number KEY: Procedural Knowledge
2. ANS: B PTS: 1 DIF: Easy REF: 3.1 Fractions to Decimals
LOC: 7.N4 TOP: Number KEY: Procedural Knowledge
3. ANS: B PTS: 1 DIF: Moderate REF: 3.1 Fractions to Decimals
LOC: 7.N4 TOP: Number KEY: Procedural Knowledge
4. ANS: D PTS: 1 DIF: Easy
REF: 3.2 Comparing and Ordering Fractions and Decimals LOC: 7.N7
TOP: Number KEY: Conceptual Understanding
5. ANS: D PTS: 1 DIF: Easy
REF: 3.2 Comparing and Ordering Fractions and Decimals LOC: 7.N7
TOP: Number KEY: Conceptual Understanding
6. ANS: A PTS: 1 DIF: Difficult
REF: 3.2 Comparing and Ordering Fractions and Decimals LOC: 7.N7
TOP: Number KEY: Problem-solving Skills
7. ANS: D PTS: 1 DIF: Easy
REF: 3.3 Adding and Subtracting Decimals LOC: 7.N2
TOP: Number KEY: Procedural Knowledge
8. ANS: A PTS: 1 DIF: Easy REF: 3.4 Multiplying Decimals
LOC: 7.N2 TOP: Number KEY: Procedural Knowledge
9. ANS: D PTS: 1 DIF: Moderate REF: 3.4 Multiplying Decimals
LOC: 7.N2 TOP: Number KEY: Conceptual Understanding
10. ANS: A PTS: 1 DIF: Moderate REF: 3.4 Multiplying Decimals
LOC: 7.N2 TOP: Number KEY: Conceptual Understanding
11. ANS: A PTS: 1 DIF: Moderate REF: 3.4 Multiplying Decimals
LOC: 7.N2 TOP: Number KEY: Problem-solving Skills
12. ANS: A PTS: 1 DIF: Moderate REF: 3.5 Dividing Decimals
LOC: 7.N2 TOP: Number KEY: Procedural Knowledge
13. ANS: B PTS: 1 DIF: Moderate REF: 3.5 Dividing Decimals
LOC: 7.N2 TOP: Number KEY: Procedural Knowledge
14. ANS: A PTS: 1 DIF: Moderate REF: 3.5 Dividing Decimals
LOC: 7.N2 TOP: Number KEY: Procedural Knowledge
15. ANS: A PTS: 1 DIF: Moderate
REF: 3.6 Order of Operations with Decimals LOC: 7.N2
TOP: Number KEY: Procedural Knowledge
16. ANS: C PTS: 1 DIF: Moderate
REF: 3.6 Order of Operations with Decimals LOC: 7.N2
TOP: Number KEY: Procedural Knowledge
17. ANS: C PTS: 1 DIF: Moderate
REF: 3.6 Order of Operations with Decimals LOC: 7.N2
TOP: Number KEY: Procedural Knowledge
18. ANS: B PTS: 1 DIF: Moderate
REF: 3.6 Order of Operations with Decimals LOC: 7.N2

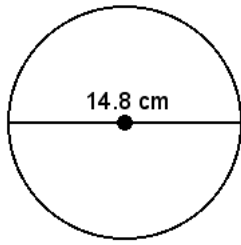
	TOP: Number	KEY: Procedural Knowledge		
19.	ANS: B	PTS: 1	DIF: Moderate	
	REF: 3.6 Order of Operations with Decimals			LOC: 7.N2
	TOP: Number	KEY: Procedural Knowledge		
20.	ANS: B	PTS: 1	DIF: Moderate	
	REF: 3.6 Order of Operations with Decimals			LOC: 7.N2
	TOP: Number	KEY: Procedural Knowledge		
21.	ANS: C	PTS: 1	DIF: Easy	
	REF: 3.7 Relating Fractions, Decimals, and Percents			LOC: 7.N3
	TOP: Number	KEY: Conceptual Understanding		
22.	ANS: C	PTS: 1	DIF: Easy	
	REF: 3.7 Relating Fractions, Decimals, and Percents			LOC: 7.N3
	TOP: Number	KEY: Conceptual Understanding		
23.	ANS: D	PTS: 1	DIF: Moderate	
	REF: 3.7 Relating Fractions, Decimals, and Percents			LOC: 7.N3
	TOP: Number	KEY: Conceptual Understanding		
24.	ANS: B	PTS: 1	DIF: Moderate	
	REF: 3.7 Relating Fractions, Decimals, and Percents			LOC: 7.N3
	TOP: Number	KEY: Procedural Knowledge		
25.	ANS: D	PTS: 1	DIF: Moderate	
	REF: 3.7 Relating Fractions, Decimals, and Percents			LOC: 7.N3
	TOP: Number	KEY: Problem-solving Skills		
26.	ANS: B	PTS: 1	DIF: Easy	
	REF: 3.7 Relating Fractions, Decimals, and Percents			LOC: 7.N3
	TOP: Number	KEY: Procedural Knowledge		
27.	ANS: C	PTS: 1	DIF: Moderate	REF: 3.8 Solving Percent Problems
	LOC: 7.N3	TOP: Number	KEY: Procedural Knowledge	
28.	ANS: D	PTS: 1	DIF: Moderate	REF: 3.8 Solving Percent Problems
	LOC: 7.N3	TOP: Number	KEY: Procedural Knowledge	
29.	ANS: D	PTS: 1	DIF: Moderate	REF: 3.8 Solving Percent Problems
	LOC: 7.N3	TOP: Number	KEY: Procedural Knowledge	
30.	ANS: C	PTS: 1	DIF: Difficult	REF: 3.8 Solving Percent Problems
	LOC: 7.N3	TOP: Number	KEY: Problem-solving Skills	

Unit 4

Multiple Choice

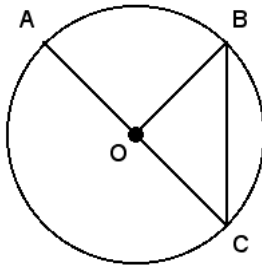
Identify the choice that best completes the statement or answers the question.

- ____ 1. A circle has radius 20 cm. What is the diameter?
a. 40 cm b. 20 cm c. 10 cm d. 80 cm
- ____ 2. What is the radius of the circle?



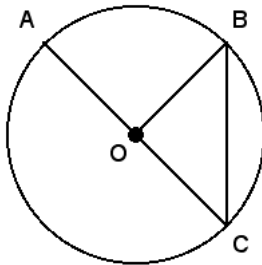
- a. 7.4 cm b. 14.8 cm c. 29.6 cm d. 3.7 cm

____ 3. Identify all the radii drawn in this circle.



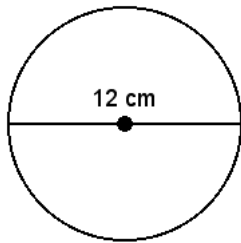
- a. OA, OB, OC c. AC
b. OA, OB, OC, AC d. OA, OB, OC, BC

____ 4. Identify all the diameters drawn in this circle.



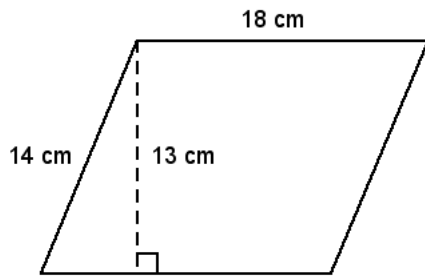
- a. BC c. OA, OB, OC
b. AC d. OA, OB, OC, BC

____ 5. Estimate the circumference of this circle.



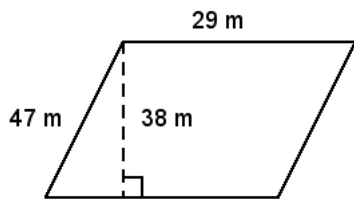
- a. 36 cm b. 18 cm c. 108 cm d. 15 cm

____ 6. Find the area of this parallelogram.



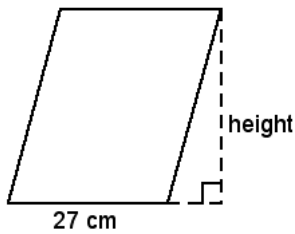
- a. 64 cm^2 b. 182 cm^2 c. 234 cm^2 d. 252 cm^2

____ 7. Find the area of this parallelogram.



- a. 67 m^2 b. 1363 m^2 c. 134 m^2 d. 1102 m^2

____ 8. Use the area to find the height of the parallelogram.
 $A = 864 \text{ cm}^2$



- a. 35 b. 28 c. 32 d. 40

____ 9. Find the area of a parallelogram with base 55 cm and height 13.6 cm.

- a. 374 cm^2 b. 748 cm^2 c. 924.8 cm^2 d. 302.5 cm^2

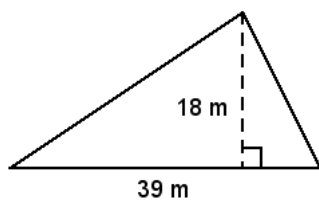
____ 10. The area of a parallelogram is 19.8 cm^2 . The height is 3 cm. Find the base.

- a. 3.3 cm b. 16.8 cm c. 6.6 cm d. 6 cm

____ 11. Find the area of the parallelogram with base 29 cm and height 9.4 cm.

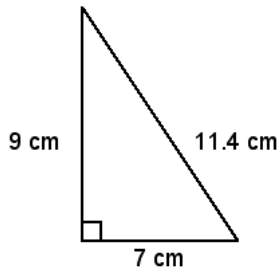
- a. 272.6 cm^2 b. 38.4 cm^2 c. 84.1 cm^2 d. 44.18 cm^2

____ 12. Find the area of this triangle.



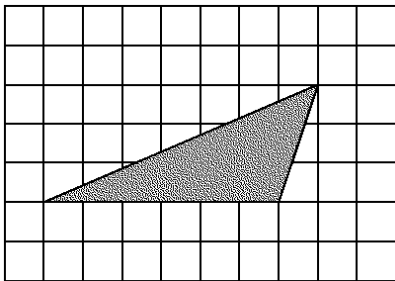
- a. 78 m^2 b. 114 m^2 c. 351 m^2 d. 57 m^2

13. Find the area of this triangle.



- a. 63 cm^2 b. 31.5 cm^2 c. 79.8 cm^2 d. 39.9 cm^2

14. A triangular sand pit sits in the middle of a rectangular piece of lawn. Find the fraction of lawn occupied by the sand pit.



- a. $\frac{9}{70}$ b. $\frac{9}{35}$ c. $\frac{9}{61}$ d. $\frac{3}{10}$

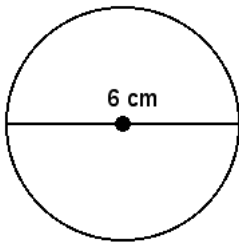
15. A triangle has area 66.5 m^2 and height 19 m. What is the length of the base?

- a. 9 m b. 3.5 m c. 7 m d. 14 m

16. A rectangular piece of fabric measures 66 cm by 66 cm. A triangular scarf with height 13 cm and base 24 cm is cut from the fabric. How much fabric is left?

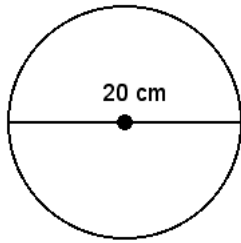
- a. 4044 cm^2 b. 4512 cm^2 c. 4200.5 cm^2 d. 4200 cm^2

17. Find the area of this circle. Leave π in your answer.



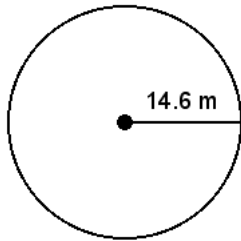
- a. $36\pi \text{ cm}^2$ b. $3\pi \text{ cm}^2$ c. $6\pi \text{ cm}^2$ d. $9\pi \text{ cm}^2$

18. Find the area of this circle. Round your answer to two decimal places.



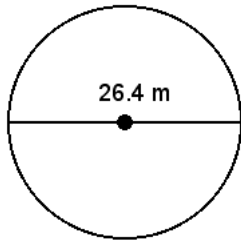
- a. 314.16 cm^2 b. 1256.64 cm^2 c. 31.42 cm^2 d. 62.83 cm^2

19. Find the area of this circle. Round your answer to two decimal places.



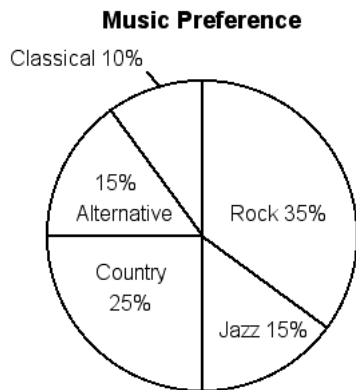
- a. 669.66 m^2 b. 45.87 m^2 c. 2678.65 m^2 d. 91.73 m^2

20. Find the area of this circle. Round your answer to two decimal places.



- a. 547.39 m^2 b. 82.94 m^2 c. 41.47 m^2 d. 2189.56 m^2

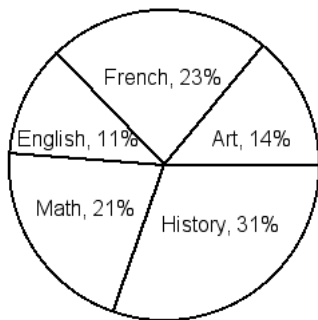
21. The circle graph shows the music preferences of a random sample of radio listeners. What percent of people surveyed prefer Rock or Country?



- a. 50% b. 60% c. 75% d. 80%

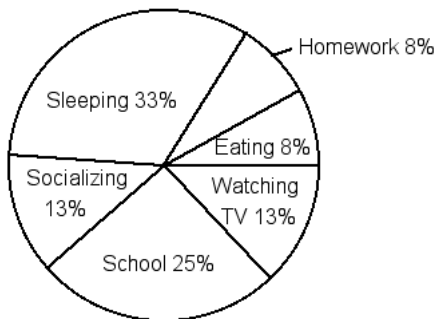
The circle graph shows how a college student breaks down her study time in a typical week.

Study Time per Week



22. What fraction of the time is spent on Art and Math?
 a. about $\frac{1}{2}$ b. about $\frac{1}{4}$ c. about $\frac{1}{3}$ d. about $\frac{2}{3}$
23. If the student spends 40 h per week studying, how much time is spent studying Math and French?
 a. 8.4 h b. 18 h c. 17.6 h d. 9.2 h
24. Grade 7 students were surveyed on how many hours per day they spend on various activities. About how many hours per day are spent on eating and sleeping?

How Students Spend Their Time



- a. 12 h b. 9 h c. 11 h d. 10 h

The table shows the number of hours per week a college student spends on different subjects.

Subject	Number of Hours
English	8
French	10
Art	5
Math	8
History	9

25. What is the sector angle for English?
 a. 70° b. 81° c. 90° d. 72°

Unit 4

Answer Section

MULTIPLE CHOICE

- | | | | |
|--------------------------------|---|---|-------------------------------|
| 1. ANS: A
LOC: 7.SS1 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Easy
REF: 4.1 Investigating Circles | KEY: Procedural Knowledge |
| 2. ANS: A
LOC: 7.SS1 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Easy
REF: 4.1 Investigating Circles | KEY: Conceptual Understanding |
| 3. ANS: A
LOC: 7.SS1 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.1 Investigating Circles | KEY: Conceptual Understanding |
| 4. ANS: B
LOC: 7.SS1 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.1 Investigating Circles | KEY: Conceptual Understanding |
| 5. ANS: A
LOC: 7.SS1 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Easy
REF: 4.2 Circumference of a Circle | KEY: Procedural Knowledge |
| 6. ANS: C
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.3 Area of a Parallelogram | KEY: Procedural Knowledge |
| 7. ANS: D
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.3 Area of a Parallelogram | KEY: Procedural Knowledge |
| 8. ANS: C
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.3 Area of a Parallelogram | KEY: Procedural Knowledge |
| 9. ANS: B
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.3 Area of a Parallelogram | KEY: Procedural Knowledge |
| 10. ANS: C
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.3 Area of a Parallelogram | KEY: Procedural Knowledge |
| 11. ANS: A
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.3 Area of a Parallelogram | KEY: Procedural Knowledge |
| 12. ANS: C
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Easy
REF: 4.4 Area of a Triangle | KEY: Procedural Knowledge |
| 13. ANS: B
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Easy
REF: 4.4 Area of a Triangle | KEY: Procedural Knowledge |
| 14. ANS: A
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.4 Area of a Triangle | KEY: Problem-solving Skills |
| 15. ANS: C
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.4 Area of a Triangle | KEY: Procedural Knowledge |
| 16. ANS: D
LOC: 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.4 Area of a Triangle | KEY: Problem-solving Skills |
| 17. ANS: D
LOC: 7.SS1 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Easy
REF: 4.5 Area of a Circle | KEY: Conceptual Understanding |
| 18. ANS: A
LOC: 7.SS1 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.5 Area of a Circle | KEY: Procedural Understanding |
| 19. ANS: A
LOC: 7.SS1 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.5 Area of a Circle | KEY: Procedural Knowledge |
| 20. ANS: A
LOC: 7.SS1 7.SS2 | PTS: 1
TOP: Shape and Space (Measurement) | DIF: Moderate
REF: 4.5 Area of a Circle | KEY: Procedural Knowledge |
| 21. ANS: B
LOC: 7.SP3 | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Easy
REF: 4.6 Interpreting Circle Graphs | KEY: Conceptual Understanding |

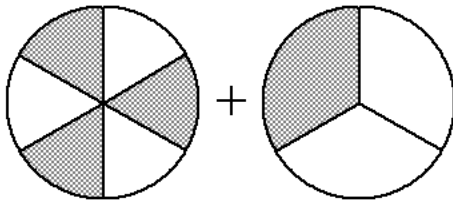
22. ANS: C PTS: 1 DIF: Moderate REF: 4.6 Interpreting Circle Graphs
 LOC: 7.SP3 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding
23. ANS: C PTS: 1 DIF: Moderate REF: 4.6 Interpreting Circle Graphs
 LOC: 7.SP3 TOP: Statistics and Probability (Data Analysis)
 KEY: Procedural Knowledge
24. ANS: D PTS: 1 DIF: Moderate REF: 4.6 Interpreting Circle Graphs
 LOC: 7.SP3 TOP: Statistics and Probability (Data Analysis)
 KEY: Procedural Knowledge
25. ANS: D PTS: 1 DIF: Moderate REF: 4.7 Drawing Circle Graphs
 LOC: 7.N3|7.SP3 TOP: Number | Statistics and Probability (Data Analysis)
 KEY: Procedural Knowledge

Unit 5

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- ____ 1. Find the sum of the fractions modelled by these fraction circles.



- a. $\frac{4}{9}$ b. $\frac{5}{6}$ c. $\frac{1}{6}$ d. $\frac{2}{3}$

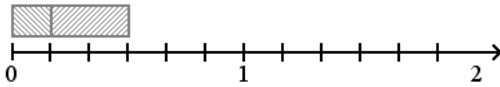
- ____ 2. Which fraction is equivalent to $\frac{1}{2}$?

- $\frac{4}{5}, \frac{3}{6}, \frac{4}{6}, \frac{2}{3}$
 a. $\frac{2}{3}$ b. $\frac{4}{5}$ c. $\frac{4}{6}$ d. $\frac{3}{6}$

- ____ 3. Which fraction is equivalent to $\frac{6}{9}$?

- $\frac{3}{6}, \frac{9}{12}, \frac{2}{3}, \frac{2}{6}$
 a. $\frac{2}{3}$ b. $\frac{3}{6}$ c. $\frac{9}{12}$ d. $\frac{2}{6}$

- ____ 4. Write an addition equation for this picture.



a. $\frac{1}{12} + \frac{2}{12} = \frac{3}{12}$

b. $\frac{1}{6} + \frac{2}{6} = \frac{3}{12}$

c. $\frac{1}{6} + \frac{2}{6} = \frac{3}{6}$

d. $1 + 2 = 3$

5. Add: $\frac{1}{4} + \frac{1}{5}$

a. $\frac{20}{9}$

b. $\frac{9}{20}$

c. $\frac{1}{10}$

d. $\frac{2}{9}$

6. Add: $\frac{1}{6} + \frac{1}{10}$

a. $\frac{4}{15}$

b. $\frac{7}{8}$

c. $\frac{1}{30}$

d. $\frac{1}{8}$

7. Add: $\frac{3}{8} + \frac{1}{3}$

a. $\frac{1}{6}$

b. $\frac{3}{4}$

c. $\frac{17}{24}$

d. $\frac{4}{11}$

8. Subtract: $\frac{4}{6} - \frac{1}{6}$

a. $\frac{1}{12}$

b. $\frac{5}{6}$

c. $\frac{1}{4}$

d. $\frac{1}{2}$

9. Subtract: $\frac{4}{5} - \frac{2}{10}$

a. $\frac{2}{5}$

b. $\frac{2}{15}$

c. $\frac{1}{5}$

d. $\frac{3}{5}$

10. Subtract: $\frac{7}{6} - \frac{11}{12}$

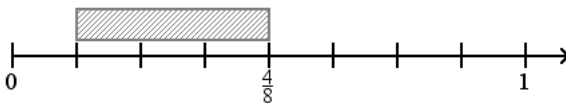
a. $\frac{3}{2}$

b. $\frac{1}{4}$

c. $\frac{2}{3}$

d. $\frac{1}{3}$

11. Write a subtraction equation for this picture.



a. $\frac{4}{8} + \frac{3}{8} = \frac{1}{8}$

c. $\frac{4}{8} - \frac{3}{8} = \frac{1}{8}$

b. $4 - 3 = 1$

d. $\frac{3}{8} - \frac{4}{8} = \frac{1}{8}$

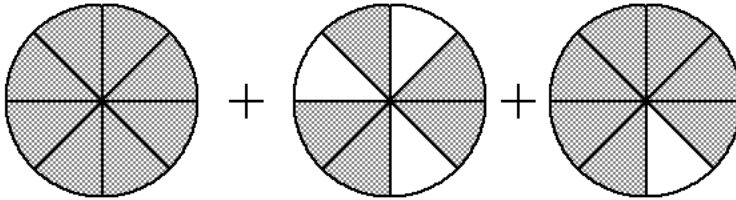
12. Subtract $\frac{3}{5}$ from $\frac{7}{10}$.

- a. $\frac{1}{10}$ b. $\frac{2}{5}$ c. $\frac{4}{15}$ d. $\frac{4}{5}$

____ 13. Subtract: $1 - \frac{10}{11}$

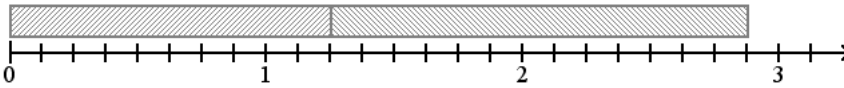
- a. $\frac{10}{21}$ b. 1 c. $\frac{1}{10}$ d. $\frac{1}{11}$

____ 14. Find the sum of the fractions modelled by these 3 fraction circles.



- a. $1\frac{3}{4}$ b. 16 c. $9\frac{1}{2}$ d. $2\frac{1}{2}$

____ 15. Find the sum of the fractions modelled by these 2 strips.



- a. $3\frac{1}{2}$ b. $2\frac{7}{8}$ c. $3\frac{1}{3}$ d. $3\frac{5}{8}$

____ 16. Write $2\frac{2}{4}$ as an improper fraction in simplest form.

- a. $\frac{5}{4}$ b. $\frac{5}{2}$ c. $\frac{9}{4}$ d. 6

____ 17. Add: $4\frac{4}{5} + \frac{9}{10}$

- a. $1\frac{7}{50}$ b. $5\frac{7}{10}$ c. $5\frac{3}{10}$ d. $4\frac{13}{15}$

____ 18. Add: $\frac{2}{3} + 4\frac{5}{6}$

- a. $4\frac{7}{18}$ b. $4\frac{7}{9}$ c. $5\frac{1}{6}$ d. $5\frac{1}{2}$

____ 19. What is the lowest common denominator you could use to add $5\frac{1}{12}$ and $4\frac{5}{6}$?

- a. 18 b. 12 c. 24 d. 72

____ 20. Add: $4\frac{1}{12} + 3\frac{5}{6}$

- a. $7\frac{1}{2}$ b. $7\frac{11}{12}$ c. $7\frac{1}{3}$ d. $7\frac{1}{4}$

_____ 21. Add: $\frac{23}{8} + \frac{15}{4}$

a. $3\frac{1}{6}$

b. $6\frac{5}{8}$

c. $26\frac{1}{2}$

d. $4\frac{3}{4}$

_____ 22. Subtract: $5\frac{3}{10} - 1\frac{1}{10}$

a. $6\frac{1}{5}$

b. $4\frac{1}{5}$

c. $4\frac{2}{5}$

d. $2\frac{1}{10}$

_____ 23. What is the lowest common denominator for the fraction parts in $2\frac{2}{3}$ and $1\frac{3}{4}$?

a. 8

b. 10

c. 12

d. 7

_____ 24. A baby was born weighing $4\frac{1}{8}$ kg. After 2 months, it weighed $6\frac{1}{4}$ kg.

How much weight did the baby gain over the 2 months?

a. $2\frac{1}{8}$ kg

b. $1\frac{7}{8}$ kg

c. $10\frac{3}{8}$ kg

d. $2\frac{1}{3}$ kg

_____ 25. Subtract: $6 - \frac{5}{6}$

a. $\frac{5}{6}$

b. $5\frac{1}{6}$

c. 1

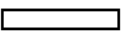
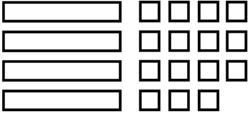
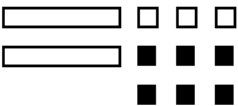
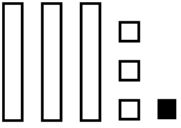
d. $1\frac{1}{6}$

Unit 5

Answer Section

MULTIPLE CHOICE

1. ANS: B PTS: 1 DIF: Moderate REF: 5.1 Using Models to Add Fractions
LOC: 7.N5 TOP: Number KEY: Conceptual Understanding
2. ANS: D PTS: 1 DIF: Easy
REF: 5.2 Using Other Models to Add Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
3. ANS: A PTS: 1 DIF: Easy
REF: 5.2 Using Other Models to Add Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
4. ANS: C PTS: 1 DIF: Easy
REF: 5.2 Using Other Models to Add Fractions LOC: 7.N5
TOP: Number KEY: Communication
5. ANS: B PTS: 1 DIF: Moderate
REF: 5.2 Using Other Models to Add Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
6. ANS: A PTS: 1 DIF: Moderate
REF: 5.3 Using Symbols to Add Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
7. ANS: C PTS: 1 DIF: Moderate
REF: 5.3 Using Symbols to Add Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
8. ANS: D PTS: 1 DIF: Easy
REF: 5.4 Using Models to Subtract Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
9. ANS: D PTS: 1 DIF: Moderate
REF: 5.4 Using Models to Subtract Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
10. ANS: B PTS: 1 DIF: Moderate
REF: 5.4 Using Models to Subtract Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
11. ANS: C PTS: 1 DIF: Moderate
REF: 5.4 Using Models to Subtract Fractions LOC: 7.N5
TOP: Number KEY: Communication
12. ANS: A PTS: 1 DIF: Moderate
REF: 5.5 Using Symbols to Subtract Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
13. ANS: D PTS: 1 DIF: Moderate
REF: 5.5 Using Symbols to Subtract Fractions LOC: 7.N5
TOP: Number KEY: Conceptual Understanding
14. ANS: D PTS: 1 DIF: Easy REF: 5.6 Adding with Mixed Numbers
LOC: 7.N5 TOP: Number KEY: Conceptual Understanding
15. ANS: B PTS: 1 DIF: Easy REF: 5.6 Adding with Mixed Numbers
LOC: 7.N5 TOP: Number KEY: Conceptual Understanding
16. ANS: B PTS: 1 DIF: Moderate REF: 5.6 Adding with Mixed Numbers

- ____ 5. Solve this equation: $5 + 10 = y + 8$
 a. 6 b. 52 c. 42 d. 7
- ____ 6. Solve this equation: $2z + 59 = 65$
 a. 3 b. 122 c. 62 d. 4
- ____ 7. Write an equation for this sentence. Then solve the equation.
 Four more than a number is 16.
 a. $x + 4 = 16, x = 4$ c. $4x = 16, x = 12$
 b. $x + 4 = 16, x = 12$ d. $4x = 16, x = 4$
- ____ 8. A 2-pan balance has 2 identical unknown masses on the left pan, and 3 masses of 5 g, 6 g, and 3 g on the right pan. What is the value of each unknown mass if the 2 pans are balanced?
 a. 7 g b. 8 g c. 12 g d. 14 g
- ____ 9.  This tile represents x .
 This tile represents $+1$.
 Write an expression modelled by this picture.

- a. $x + 15$ b. $4x - 15$ c. $4x - 1$ d. $4x + 15$
- ____ 10. Solve this equation: $x + 2 = 4$
 a. 6 b. 8 c. 1 d. 2
- ____ 11. Solve this equation: $x - 5 = 10$
 a. 2 b. 8 c. 15 d. 5
- ____ 12. A white square represents $+1$, a black square represents -1 , and a rectangle represents the variable x .
 Write an expression modelled by this picture.

- a. $2x + 9$ b. $2x + 3$ c. $2x - 3$ d. $2x - 6$
- ____ 13. A white square represents $+1$, a black square represents -1 , and a rectangle represents the variable x .
 Write an expression modelled by this picture.

- a. $3x + 4$ b. $x - 2$ c. $x + 2$ d. $3x + 2$
- ____ 14. Solve this equation: $-31 = x + 28$
 a. 59 b. 3 c. -3 d. -59
- ____ 15. A number increased by 3 is 7. Write an equation to find the number. Solve the equation.
 a. $x + 7 = 3, x = -10$ c. $x + 3 = 7, x = 4$

b. $x + 3 = 7, x = -4$

d. $x - 7 = 3, x = 10$

_____ 16. Solve this equation: $4x + 10 = 18$

a. 4

b. 1

c. 2

d. 7

_____ 17. Write an equation to find this number: the number reduced by 5 is equal to 7.
Solve the equation.

a. $x + 5 = 7, x = 2$

c. $x - 5 = 7, x = 12$

b. $5 - x = 7, x = 12$

d. $x - 7 = 5, x = -2$

_____ 18. The perimeter of a regular hexagon is 48 cm.

Write an equation you can use to find the side length of the hexagon. Solve the equation.

a. $6x = 48, x = 8$

c. $x + 6 = 48, x = 8$

b. $6x = 48, x = 42$

d. $x + 6 = 48, x = 42$

_____ 19. In x weeks and 3 days, it will be Kevin's birthday. His birthday is in 31 days.

Write an equation you can use to find the value of x . Solve the equation.

a. $7x - 3 = 31, x = 4$

c. $x + 3 = 4, x = 1$

b. $7x + 3 = 31, x = 4$

d. $21x = 31, x = 10$

_____ 20. Solve this equation: $9x = 36$

a. 4

b. 26

c. 27

d. 324

_____ 21. Solve this equation: $3x + 6 = 15$

a. 7

b. 6

c. 3

d. 5

_____ 22. Liam is solving an equation modelled by algebra tiles. On the left side of the line representing the equal sign, there are 1 x -tile, 3 positive unit tiles, and 2 negative unit tiles. On the right side, there are 9 positive unit tiles and 7 negative unit tiles. What is the value of x ?

a. 1

b. 11

c. 21

d. -11

_____ 23. The 3 sides of a triangle measure $(x + 5)$ cm, $(x + 6)$ cm, and $(x + 7)$ cm.

If the perimeter of the triangle is 45 cm, find the value of x .

a. 9 cm

b. 18 cm

c. 21 cm

d. 27 cm

_____ 24. Martin had \$45. He spent an average of \$13 each week. Write an equation you can use to find the amount, C , Martin would have after n weeks.

a. $C = 32n$

b. $C = 45 - \frac{13}{n}$

c. $C = \frac{32}{n}$

d. $C = 45 - 13n$

_____ 25. Solve this equation: $6x - 5 = 19$

a. 18

b. 17

c. 4

d. 2

Unit 6

Answer Section

MULTIPLE CHOICE

- | | | | |
|---|--------|---------------|-------------------------------|
| 1. ANS: D | PTS: 1 | DIF: Easy | REF: 6.1 Solving Equations |
| LOC: 7.PR3 7.PR4 | | | |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 2. ANS: D | PTS: 1 | DIF: Easy | REF: 6.1 Solving Equations |
| LOC: 7.PR3 7.PR7 | | | |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 3. ANS: B | PTS: 1 | DIF: Moderate | REF: 6.1 Solving Equations |
| LOC: 7.PR3 7.PR7 | | | |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Problem-solving Skills |
| 4. ANS: D | PTS: 1 | DIF: Easy | |
| REF: 6.2 Using a Model to Solve Equations | | | LOC: 7.PR3 7.PR6 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 5. ANS: D | PTS: 1 | DIF: Moderate | |
| REF: 6.2 Using a Model to Solve Equations | | | LOC: 7.PR3 7.PR6 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 6. ANS: A | PTS: 1 | DIF: Moderate | |
| REF: 6.2 Using a Model to Solve Equations | | | LOC: 7.PR3 7.PR7 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 7. ANS: B | PTS: 1 | DIF: Moderate | |
| REF: 6.2 Using a Model to Solve Equations | | | LOC: 7.PR3 7.PR6 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Communication |
| 8. ANS: A | PTS: 1 | DIF: Moderate | |
| REF: 6.2 Using a Model to Solve Equations | | | LOC: 7.PR3 7.PR7 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 9. ANS: D | PTS: 1 | DIF: Easy | |
| REF: 6.3 Solving Equations Involving Integers | | | LOC: 7.PR3 7.PR7 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Communication |
| 10. ANS: D | PTS: 1 | DIF: Easy | |
| REF: 6.3 Solving Equations Involving Integers | | | LOC: 7.PR3 7.PR6 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 11. ANS: C | PTS: 1 | DIF: Easy | |
| REF: 6.3 Solving Equations Involving Integers | | | LOC: 7.PR3 7.PR6 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 12. ANS: C | PTS: 1 | DIF: Moderate | |
| REF: 6.3 Solving Equations Involving Integers | | | LOC: 7.PR3 7.PR7 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Communication |
| 13. ANS: D | PTS: 1 | DIF: Moderate | |
| REF: 6.3 Solving Equations Involving Integers | | | LOC: 7.PR3 7.PR7 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Communication |
| 14. ANS: D | PTS: 1 | DIF: Moderate | |
| REF: 6.3 Solving Equations Involving Integers | | | LOC: 7.PR3 7.PR6 |
| TOP: Patterns and Relations (Variables and Equations) | | | KEY: Conceptual Understanding |
| 15. ANS: C | PTS: 1 | DIF: Moderate | |

	REF: 6.3 Solving Equations Involving Integers	LOC: 7.PR3 7.PR6
	TOP: Patterns and Relations (Variables and Equations)	KEY: Communication
16.	ANS: C PTS: 1 DIF: Moderate	
	REF: 6.4 Solving Equations Using Algebra	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Conceptual Understanding
17.	ANS: C PTS: 1 DIF: Moderate	
	REF: 6.4 Solving Equations Using Algebra	LOC: 7.PR3 7.PR6
	TOP: Patterns and Relations (Variables and Equations)	KEY: Communication
18.	ANS: A PTS: 1 DIF: Moderate	
	REF: 6.4 Solving Equations Using Algebra	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Communication
19.	ANS: B PTS: 1 DIF: Difficult	
	REF: 6.4 Solving Equations Using Algebra	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Communication
20.	ANS: A PTS: 1 DIF: Easy	
	REF: 6.5 Using Different Methods to Solve Equations	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Conceptual Understanding
21.	ANS: C PTS: 1 DIF: Moderate	
	REF: 6.5 Using Different Methods to Solve Equations	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Conceptual Understanding
22.	ANS: A PTS: 1 DIF: Moderate	
	REF: 6.5 Using Different Methods to Solve Equations	LOC: 7.PR3 7.PR6
	TOP: Patterns and Relations (Variables and Equations)	KEY: Conceptual Understanding
23.	ANS: A PTS: 1 DIF: Moderate	
	REF: 6.5 Using Different Methods to Solve Equations	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Problem-solving Skills
24.	ANS: D PTS: 1 DIF: Difficult	
	REF: 6.5 Using Different Methods to Solve Equations	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Communication
25.	ANS: C PTS: 1 DIF: Moderate	
	REF: 6.5 Using Different Methods to Solve Equations	LOC: 7.PR3 7.PR7
	TOP: Patterns and Relations (Variables and Equations)	KEY: Conceptual Understanding

Unit 7

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- _____ 1. Find the mean of this set of data: 6, 8, 10, 12
a. 18 b. 9 c. 36 d. 10
- _____ 2. Find the mode of this set of data: 7, 14, 14, 19, 21
a. 14 b. 10 c. 37.5 d. 15
- _____ 3. Find the mode of this set of data: 26, 7, 7, 24, 26, 15, 26, 21
a. 7 b. 26 c. 22 d. 19

- _____ 4. Calculate the mean of this set of data: 12, 13, 14, 15, 16, 17
a. 21.75 b. 15 c. 14.5 d. 13.5
- _____ 5. Find the mean and mode of this set of data: 15, 18, 6, 21, 18, 12, 22
a. Mean: 16, mode: 18 c. Mean: 18, mode: 16
b. Mean: 15, mode: 18 d. Mean: 16, mode: 22
- _____ 6. Here are the monthly savings, in dollars, that Mary saved for a year:
19, 22, 14, 34, 34, 34, 16, 16, 25, 27, 24, 23
Find the mean amount of money saved.
a. \$34 b. \$24 c. \$25 d. \$23
- _____ 7. Ron was in charge of collecting contributions for the Food Bank.
He received \$45, \$18, \$41, \$37, and \$23 from 5 co-workers.
Find the median of these contributions.
a. \$39 b. \$35 c. \$40 d. \$37
- _____ 8. Which 2 data sets have a median of 24?
P: 24, 28, 17, 25, 20
Q: 18, 28, 26, 24, 25
R: 22, 29, 26, 24, 16
S: 17, 24, 23, 21, 29
a. P and S b. Q and S c. R and S d. P and R
- _____ 9. Which 2 data sets have a range of 11?
P: 24, 28, 17, 25, 20
Q: 18, 29, 26, 24, 25
R: 22, 29, 26, 24, 16
S: 17, 24, 23, 21, 29
a. R and S b. P and Q c. P and R d. Q and S
- _____ 10. Identify the outlier in this set of data: 7, 8, 11, 6, 24, 9, 11
a. 6 b. 24 c. 8 d. 11
- _____ 11. Identify the outlier of this set of data: 20, 15, 22, 14, 35, 21, 19, 13
a. 15 b. 21 c. 22 d. 35
- _____ 12. Identify the outlier of this set of data: 3.3, 4.7, 5.1, 4.1, 0.6, 6.9, 3.4, 4.6
a. 3.3 b. 0.6 c. 3.4 d. 4.6
- _____ 13. Here is a set of data: 22, 23, 16, 35, 19
Calculate the mean without the outlier.
a. 24.75 b. 23 c. 21.3 d. 20
- _____ 14. Don receives these marks on 4 math tests: 80, 84, 90, 76
What mark must he get on the next math test to have a mean of 80 for 5 tests?
a. 70 b. 75 c. 62 d. 76
- _____ 15. Here are the data for the populations of 10 small towns:
1900, 1068, 833, 2021, 1048, 1303, 1528, 979, 1713, 1775
Find the mean, median, and mode of the data.
a. Mean: 1275.1, median: 1415.5, mode: 1427
b. Mean: 1275.1, median: 1415.5, mode: 1303
c. Mean: 1417, median: 1415.5, no mode

d. Mean: 1417, median: 1427, mode: 1303

- _____ 16. A spinner is divided into 10 equal sectors numbered 1 to 10. You spin the pointer on the spinner once. Find the probability of spinning a number that is not 6.
a. $\frac{4}{5}$ b. $\frac{9}{10}$ c. $\frac{1}{10}$ d. $\frac{3}{5}$
- _____ 17. Twenty cards are numbered from 1 to 20. One card is drawn without looking. What is the probability that the number on the card is divisible by 5? Express the probability as a percent.
a. 8% b. 20% c. 15% d. 4%
- _____ 18. A month is picked at random. What is the probability that its name begins with the letter J? Express the probability as a ratio in simplest form.
a. 3:1 b. 1:3 c. 1:4 d. 4:1
- _____ 19. Jill wants to buy either a ball pen or an ink pen. Both pens come in 7 styles. Find the number of possible choices.
a. 9 b. 17 c. 14 d. 11
- _____ 20. Mel has 2 different sweaters and 3 different pairs of pants. How many possible combinations of pants and sweaters can he wear?
a. 5 b. $\frac{2}{5}$ c. $\frac{3}{5}$ d. 6
- _____ 21. A yogurt shop offers 3 flavours of frozen yogurt and 10 toppings. How many choices are possible for a single flavour frozen yogurt with 1 topping?
a. 28 b. 30 c. 33 d. 13
- _____ 22. A coin is tossed and a die labelled 1 to 6 is rolled. What is the probability of getting a tail on the coin and a number less than 2 on the die?
a. $\frac{11}{12}$ b. $\frac{1}{6}$ c. $\frac{5}{12}$ d. $\frac{1}{12}$
- _____ 23. Grace wants to find the probability of having 2 boys and 1 girl in a family of 3 children. She tosses 3 coins with a head representing a boy and a tail representing a girl. What is the probability of having 2 boys and 1 girl?
a. $\frac{5}{8}$ b. $\frac{2}{3}$ c. $\frac{1}{2}$ d. $\frac{3}{8}$
- _____ 24. Two spinners are each divided into 4 equal sectors. Spinner P has 2 blue sectors and 2 red sectors. Spinner Q has 2 blue sectors, 1 red sector, and 1 green sector. The pointers on both spinners are spun once. What is the probability of spinning a blue on each spinner?
a. $\frac{1}{4}$ b. $\frac{3}{8}$ c. $\frac{1}{8}$ d. $\frac{1}{2}$
- _____ 25. Mr. Crooks has 2 plain shirts and 4 striped shirts. He also has 3 plain ties and 2 striped ties. He picks a shirt and a tie without looking. What is the probability of getting a striped shirt and a striped tie?
a. $\frac{6}{11}$ b. $\frac{4}{15}$ c. $\frac{8}{11}$ d. $\frac{1}{5}$

Unit 7

Answer Section

MULTIPLE CHOICE

- | | | | | |
|-----|--|---|--|---|
| 1. | ANS: B
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Easy | REF: 7.1 Mean and Mode |
| 2. | ANS: A
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Easy | REF: 7.1 Mean and Mode |
| 3. | ANS: B
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Easy | REF: 7.1 Mean and Mode |
| 4. | ANS: C
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Moderate | REF: 7.1 Mean and Mode |
| 5. | ANS: A
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Moderate | REF: 7.1 Mean and Mode |
| 6. | ANS: B
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Moderate | REF: 7.1 Mean and Mode |
| 7. | ANS: D
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Moderate | REF: 7.2 Median and Range |
| 8. | ANS: D
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Moderate | REF: 7.2 Median and Range |
| 9. | ANS: B
LOC: 7.SP1
KEY: Conceptual Understanding | PTS: 1
TOP: Statistics and Probability (Data Analysis) | DIF: Moderate | REF: 7.2 Median and Range |
| 10. | ANS: B
REF: 7.3 The Effects of Outliers on Average
TOP: Statistics and Probability (Data Analysis) | PTS: 1 | DIF: Easy | LOC: 7.SP2
KEY: Conceptual Understanding |
| 11. | ANS: D
REF: 7.3 The Effects of Outliers on Average
TOP: Statistics and Probability (Data Analysis) | PTS: 1 | DIF: Easy | LOC: 7.SP2
KEY: Conceptual Understanding |
| 12. | ANS: B
REF: 7.3 The Effects of Outliers on Average
TOP: Statistics and Probability (Data Analysis) | PTS: 1 | DIF: Moderate | LOC: 7.SP2
KEY: Conceptual Understanding |
| 13. | ANS: D
REF: 7.3 The Effects of Outliers on Average
TOP: Statistics and Probability (Data Analysis) | PTS: 1 | DIF: Moderate | LOC: 7.SP2
KEY: Conceptual Understanding |
| 14. | ANS: A
LOC: 7.SP1 7.SP2
KEY: Problem-solving Skills | PTS: 1 | DIF: Moderate
TOP: Statistics and Probability (Data Analysis) | REF: 7.4 Applications of Averages |
| 15. | ANS: C | PTS: 1 | DIF: Moderate | REF: 7.4 Applications of Averages |

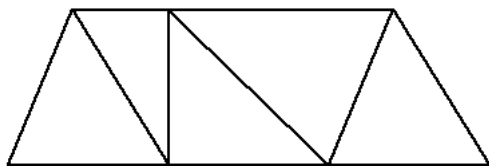
- LOC: 7.SP1 | 7.SP2 TOP: Statistics and Probability (Data Analysis)
 KEY: Conceptual Understanding
16. ANS: B PTS: 1 DIF: Moderate
 REF: 7.5 Different Ways to Express Probability LOC: 7.SP4
 TOP: Statistics and Probability (Chance and Uncertainty) KEY: Conceptual Understanding
17. ANS: B PTS: 1 DIF: Moderate
 REF: 7.5 Different Ways to Express Probability LOC: 7.SP4
 TOP: Statistics and Probability (Chance and Uncertainty) KEY: Conceptual Understanding
18. ANS: C PTS: 1 DIF: Moderate
 REF: 7.5 Different Ways to Express Probability LOC: 7.SP4
 TOP: Statistics and Probability (Chance and Uncertainty) KEY: Conceptual Understanding
19. ANS: C PTS: 1 DIF: Easy REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding
20. ANS: D PTS: 1 DIF: Easy REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding
21. ANS: B PTS: 1 DIF: Easy REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding
22. ANS: D PTS: 1 DIF: Moderate REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding
23. ANS: D PTS: 1 DIF: Moderate REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding
24. ANS: A PTS: 1 DIF: Difficult REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding
25. ANS: B PTS: 1 DIF: Difficult REF: 7.6 Tree Diagrams
 LOC: 7.SP5 TOP: Statistics and Probability (Chance and Uncertainty)
 KEY: Conceptual Understanding

Unit 8

Multiple Choice

Identify the choice that best completes the statement or answers the question.

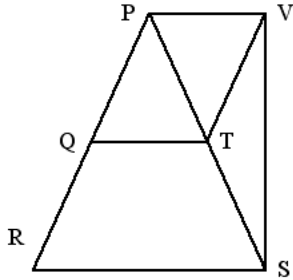
- ____ 1. How many pairs of parallel line segments are in this diagram?



- a. 1 b. 2 c. 4 d. 3

2. Which of these quadrilaterals have more than 1 pair of parallel line segments?
kite, parallelogram, rectangle, rhombus
a. parallelogram, rectangle, rhombus c. kite, parallelogram, rhombus
b. kite, parallelogram, rectangle d. all of these

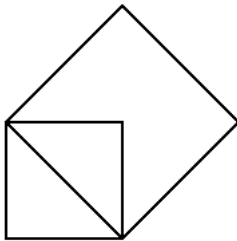
3. Which statements are true for the line segments in this diagram?



- i) Line segment PV is parallel to line segment QT.
ii) Line segment PQ is parallel to line segment VS.
iii) Line segment QR is parallel to line segment VT.
iv) Line segment QT is parallel to line segment RS.

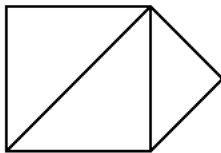
- a. i, iii, and iv b. i, ii, and iv c. i, ii, and iii d. all of these

4. How many right angles are in this diagram?



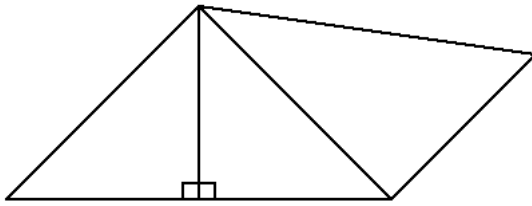
- a. 4 b. 8 c. 6 d. 2

5. How many pairs of perpendicular line segments are in this diagram?



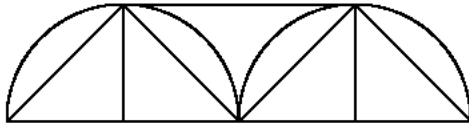
- a. 3 b. 5 c. 4 d. 6

6. How many right angles are in this diagram?



- a. 2 b. 4 c. 3 d. 5

7. How many right angles are in this diagram?



- a. 7 b. 4 c. 2 d. 6

8. Which diagram shows a correct way to place a Mira to construct the perpendicular bisector of line segment PQ?

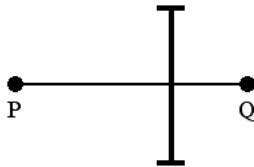


Figure A

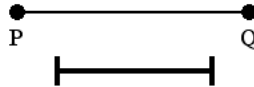


Figure B

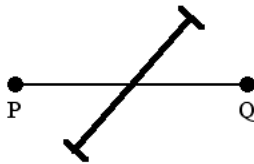


Figure C

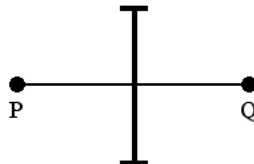


Figure D

- a. Figure D b. Figure C c. Figure B d. Figure A

9. Which diagram shows a correct method for constructing the perpendicular bisector of line segment PQ?

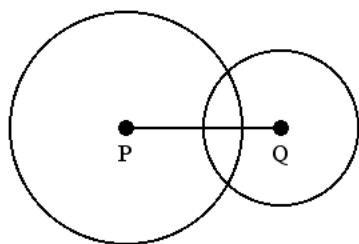


Figure A

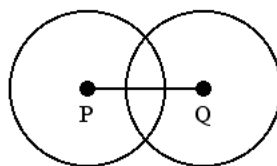


Figure B

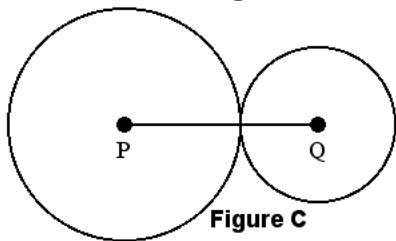


Figure C

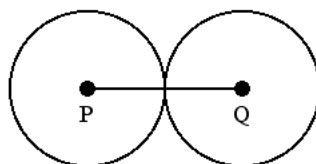
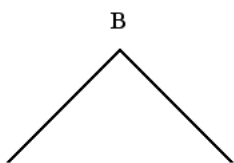


Figure D

- a. Figure C b. Figure B c. Figure A d. Figure D

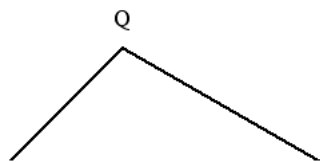
10. The perpendicular bisectors of line segments AB and BC meet at a point D.



Where is point D located?

- a. cannot be determined c. outside $\triangle ABC$
b. on line segment BC d. inside $\triangle ABC$

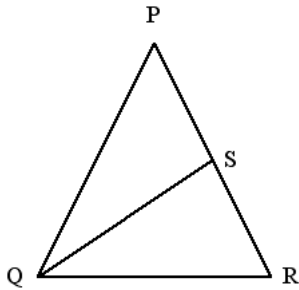
11. The perpendicular bisectors of line segments PQ and QR meet at a point S.



Where is point S located?

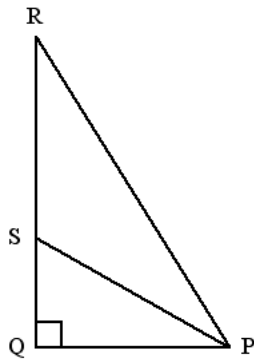
- a. outside $\triangle PQR$ c. on line segment PR
b. inside $\triangle PQR$ d. cannot be determined

12. In this diagram, $\triangle PQR$ is an equilateral triangle. Line segment QS is the bisector of $\angle Q$. What type of triangle is $\triangle PQS$?

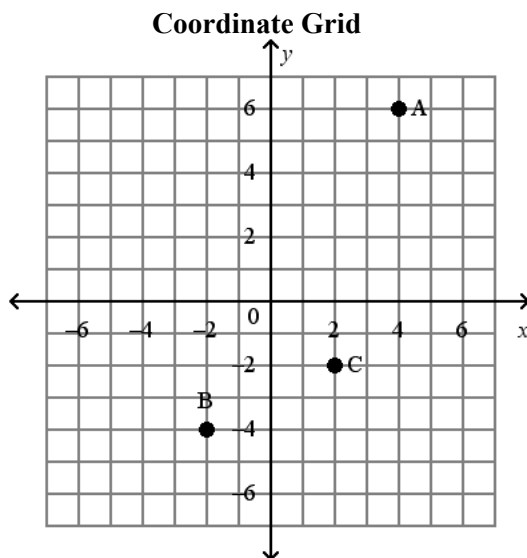


- a. equilateral b. right-angled c. isosceles d. obtuse-angled

13. In this diagram, $\triangle PQR$ is a right-angled triangle. Line segment PS is the bisector of $\angle P$ and $\angle P = 60^\circ$. What type of triangle is $\triangle PRS$?



- a. acute isosceles c. scalene
b. right isosceles d. obtuse isosceles

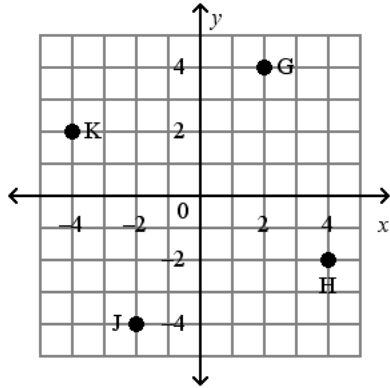


14. Use the Coordinate Grid diagram. In which quadrant is point B?
Write the coordinates of point B.
- a. quadrant 4; $(-4, -2)$ c. quadrant 3; $(2, 4)$

b. quadrant 2; $(-2, -4)$

d. quadrant 3; $(-2, -4)$

____ 15. Name the point with coordinates $(4, -2)$ on this grid.



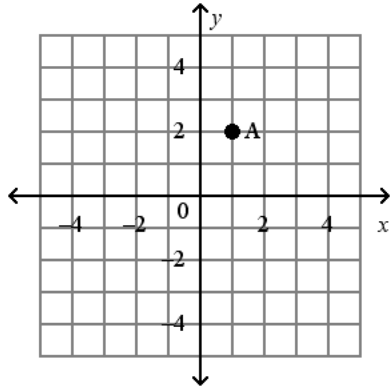
a. H

b. J

c. K

d. G

____ 16. Write the coordinates of point A on this grid.



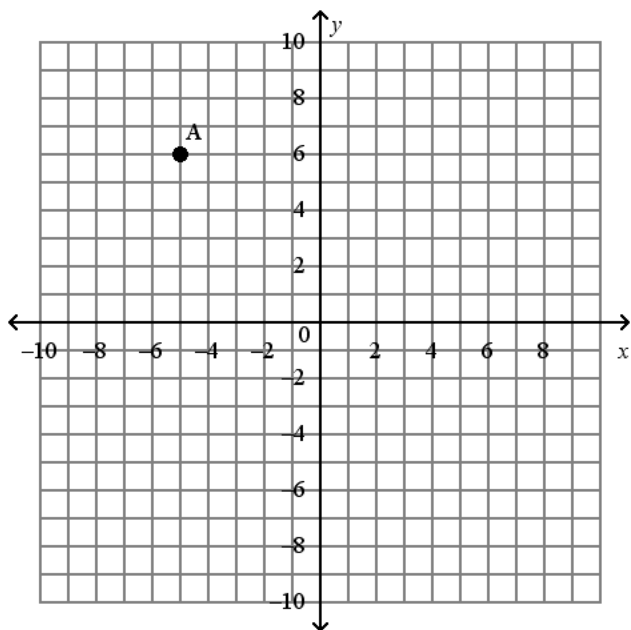
a. $(-1, -2)$

b. $(1, 2)$

c. $(1, -2)$

d. $(-1, 2)$

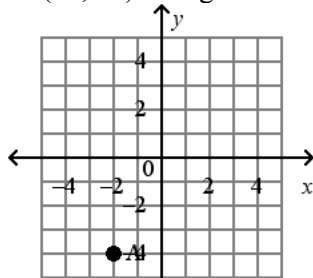
____ 17. Write the coordinates of point A on this grid.



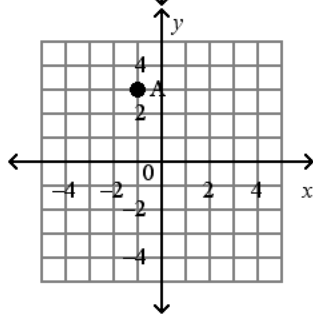
- a. $(-5, 6)$ b. $(5, 6)$ c. $(5, -6)$ d. $(6, -5)$

_____ 18. Plot A $(-1, -4)$ on a grid.

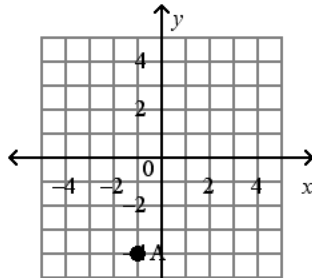
a.



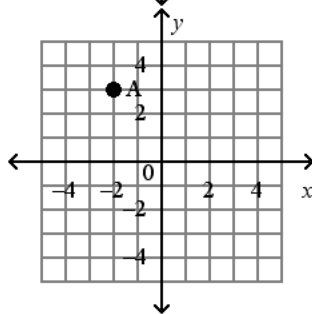
b.



c.

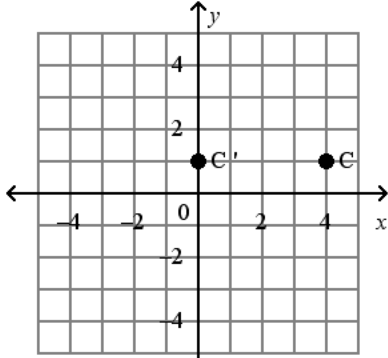


d.

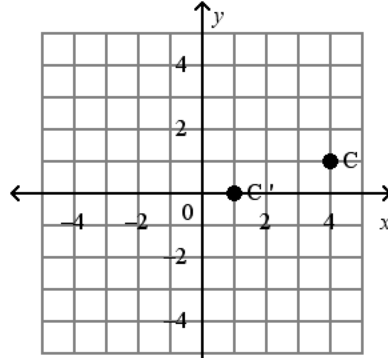


_____ 19. Plot point C $(1, 4)$ on the grid. Translate the point 1 unit left and 3 units down. Label the image point C' .

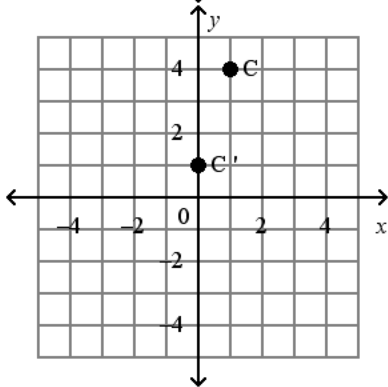
a.



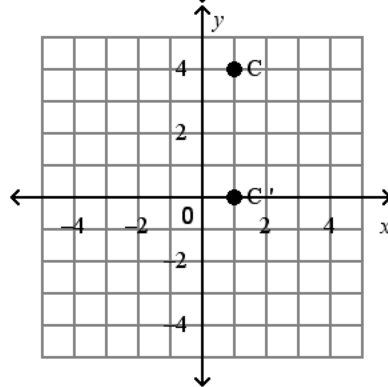
c.



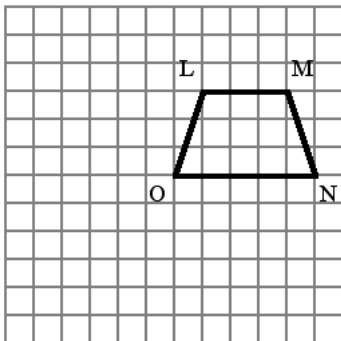
b.



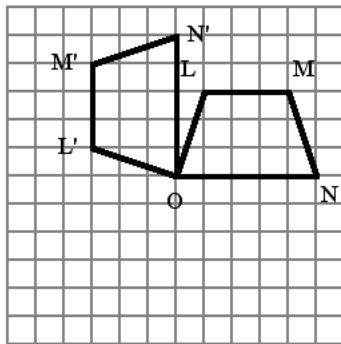
d.



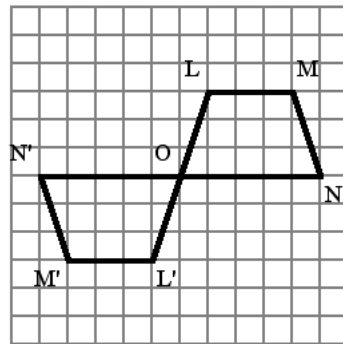
20. Point $A(2, 2)$ is reflected in the x -axis. Write the coordinates of the image point A' .
- a. $(2, -2)$ b. $(2, 2)$ c. $(-2, 2)$ d. $(-2, -2)$
21. $\triangle PQR$ has vertices $P(2, -3)$, $Q(-8, -4)$, and $R(1, -2)$.
The triangle is translated 2 units right and 2 units down.
Write the coordinates of each vertex of the image $\triangle P'Q'R'$.
- a. $P'(0, -1)$, $Q'(-10, -2)$, $R'(-1, 0)$ c. $P'(0, -5)$, $Q'(-10, -6)$, $R'(-1, -4)$
b. $P'(4, -1)$, $Q'(-6, -2)$, $R'(3, 0)$ d. $P'(4, -5)$, $Q'(-6, -6)$, $R'(3, -4)$
22. Draw the image of this shape after a 180° rotation about point O .



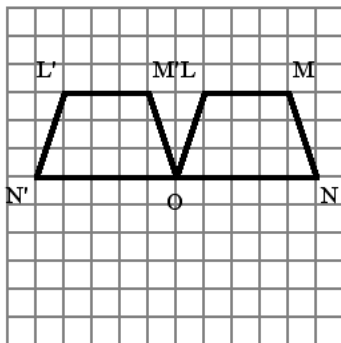
a.



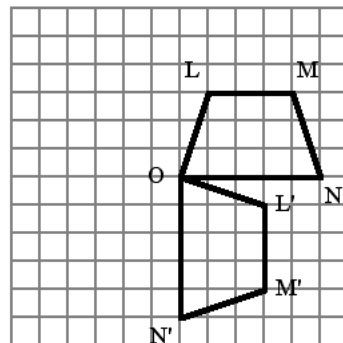
c.



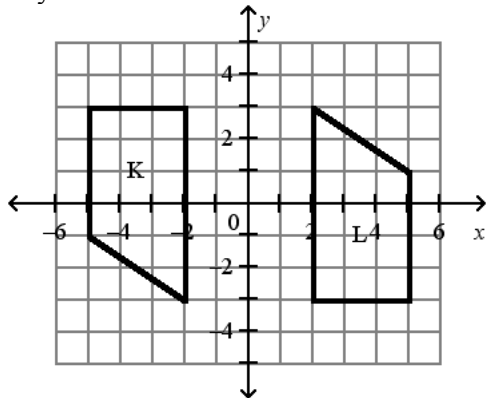
b.



d.



23. Identify the transformation that will move shape K to shape L.



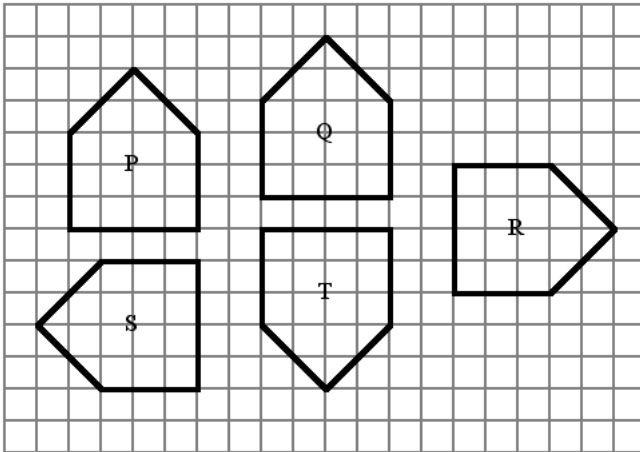
- a. a -90° rotation about the origin
b. a reflection in the y-axis

- c. a $+90^\circ$ rotation about the origin
d. a 180° rotation about the origin

24. Write the coordinates of the image of point K(4, -5) after a -90° rotation about the origin.

- a. (-4, 5) b. (-5, -4) c. (5, 4) d. (4, 5)

25. Which pentagon cannot be the image of pentagon P after a rotation about a point on this grid?



a. pentagon S

b. pentagon Q

c. pentagon T

d. pentagon R

Unit 8

Answer Section

MULTIPLE CHOICE

1. ANS: D PTS: 1 DIF: Easy REF: 8.1 Parallel Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
2. ANS: A PTS: 1 DIF: Moderate REF: 8.1 Parallel Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
3. ANS: A PTS: 1 DIF: Moderate REF: 8.1 Parallel Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
4. ANS: B PTS: 1 DIF: Moderate REF: 8.2 Perpendicular Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
5. ANS: D PTS: 1 DIF: Moderate REF: 8.2 Perpendicular Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
6. ANS: B PTS: 1 DIF: Moderate REF: 8.2 Perpendicular Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
7. ANS: A PTS: 1 DIF: Moderate REF: 8.2 Perpendicular Lines
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
8. ANS: A PTS: 1 DIF: Easy
REF: 8.3 Constructing Perpendicular Bisectors LOC: 7.SS3
TOP: Shape and Space (3-D Objects and 2-D Shapes) KEY: Conceptual Understanding
9. ANS: B PTS: 1 DIF: Easy
REF: 8.3 Constructing Perpendicular Bisectors LOC: 7.SS3
TOP: Shape and Space (3-D Objects and 2-D Shapes) KEY: Conceptual Understanding
10. ANS: D PTS: 1 DIF: Moderate
REF: 8.3 Constructing Perpendicular Bisectors LOC: 7.SS3
TOP: Shape and Space (3-D Objects and 2-D Shapes) KEY: Procedural Knowledge
11. ANS: A PTS: 1 DIF: Moderate
REF: 8.3 Constructing Perpendicular Bisectors LOC: 7.SS3
TOP: Shape and Space (3-D Objects and 2-D Shapes) KEY: Procedural Knowledge
12. ANS: B PTS: 1 DIF: Easy REF: 8.4 Constructing Angle Bisectors
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
13. ANS: D PTS: 1 DIF: Moderate REF: 8.4 Constructing Angle Bisectors
LOC: 7.SS3 TOP: Shape and Space (3-D Objects and 2-D Shapes)
KEY: Conceptual Understanding
14. ANS: D PTS: 1 DIF: Easy REF: 8.5 Graphing on a Coordinate Grid
LOC: 7.SS4 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
15. ANS: A PTS: 1 DIF: Easy REF: 8.5 Graphing on a Coordinate Grid

- LOC: 7.SS4 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
16. ANS: B PTS: 1 DIF: Easy REF: 8.5 Graphing on a Coordinate Grid
LOC: 7.SS4 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
17. ANS: A PTS: 1 DIF: Easy REF: 8.5 Graphing on a Coordinate Grid
LOC: 7.SS4 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
18. ANS: C PTS: 1 DIF: Easy REF: 8.5 Graphing on a Coordinate Grid
LOC: 7.SS4 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
19. ANS: B PTS: 1 DIF: Easy
REF: 8.6 Graphing Translations and Reflections LOC: 7.SS5
TOP: Shape and Space (Transformations) KEY: Conceptual Understanding
20. ANS: A PTS: 1 DIF: Easy
REF: 8.6 Graphing Translations and Reflections LOC: 7.SS5
TOP: Shape and Space (Transformations) KEY: Conceptual Understanding
21. ANS: D PTS: 1 DIF: Moderate
REF: 8.6 Graphing Translations and Reflections LOC: 7.SS5
TOP: Shape and Space (Transformations) KEY: Conceptual Understanding
22. ANS: C PTS: 1 DIF: Easy REF: 8.7 Graphing Rotations
LOC: 7.SS5 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
23. ANS: D PTS: 1 DIF: Easy REF: 8.7 Graphing Rotations
LOC: 7.SS5 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
24. ANS: B PTS: 1 DIF: Moderate REF: 8.7 Graphing Rotations
LOC: 7.SS5 TOP: Shape and Space (Transformations)
KEY: Conceptual Understanding
25. ANS: B PTS: 1 DIF: Difficult REF: 8.7 Graphing Rotations
LOC: 7.SS5 TOP: Shape and Space (Transformations)
KEY: Problem-solving Skills