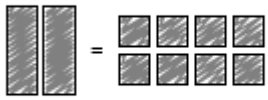
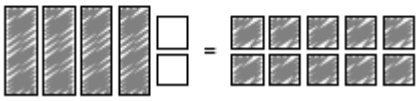
MathLinks 9 Practice and Homework Book
Chapter 8 Answers

8 Get Ready

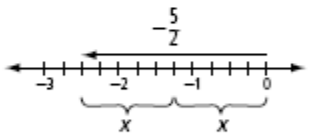
1. Examples:

a) 

b) 

2. a) $2x - 6 = 6$ b) $6 = 3x - 9$
3. a) $2x + 7 = -3$, so $x = -5$
   b) $3x - 4 = 5$, so $x = 3$
4. a) $s = 6$ b) $x = 8$
5. a) $5(-4) + 7 = -13$, so $x = -4$ is the solution
   b) $12 - 5(-4) = 32$, so $x = -4$ is not the solution
6. a) $x = 7$; Check: $7 - 2 = 5$
   b) $t = 2$; Check: $3(2) + 4 = 10$
   c) $g = -2$; Check: $2(-2) - 7 = 11$

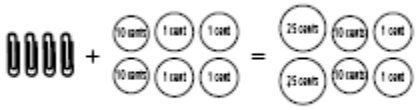
8.1 Solving Equations: $ax = b$, $\frac{x}{a} = b$, $\frac{a}{x} = b$

1. number lines, materials, algebraic
2. substitution 3. solution, facts
4. $4x = 0.24$; $x = 0.06$
5. 

6. a) $m = \frac{7}{15}$ b) $x = \frac{8}{9}$ c) $x = -\frac{45}{4}$ or $-11\frac{1}{4}$
   d) $k = \frac{10}{9}$ or $1\frac{1}{9}$
7. a) $w = 15.36$ b) $d = -1.125$
   c) $x = -23.25$ d) $m = 0.255$
8. a) $r = 2.1$ b) $x = -3.5$
9. a) $t \approx 2.59$ b) $y \approx -9.16$
10. a) $18.5 = \frac{d}{0.75}$, so $d = 13.875$ km
    b) $90 = \frac{128}{t}$, so $t = 1.42$ h
11. \$259.80 12. 625 mL 13. 5 14. 20

8.2 Solving Equations: $ax + b = c$, $\frac{x}{a} + b = c$

1. model 2. subtract, multiply 3. denominators
4. solution, substitution, facts
5. Example: $\frac{x}{3} + \frac{3}{10} = \frac{4}{5}$, so $x = \frac{3}{2}$
6. Example:

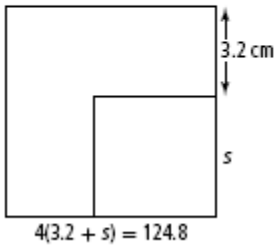


$x = 0.12$

7. No. Example: 2.5x, should have been multiplied by the same value, 100, as the other terms.
8. a) $x = \frac{11}{20}$ b) $x = \frac{-3}{2}$ or $-1\frac{1}{2}$ c) $g = \frac{145}{24}$ or $6\frac{1}{24}$
   d) $q = \frac{51}{10}$ or $5\frac{1}{10}$
9. a) $x = 8.6$ b) $f = -1.8$ c) $b = 38.7$
10. 37.5 min 11. 1406 km² 12. 19.4 cm 13. 70

8.3 Solving Equations: $a(x + b) = c$

1. divide, distributive 2. substitute
3. Example: $(3)\left(\frac{1}{3}\right)(x - 4) = 3(2)$ or $x - 4 = 6$
4. a) $x = -0.7$ b) $m = 3.74$ c) $a = -4.1$
   d) $x = 2$
5. a) $v = -4.19$ b) $y = 5.32$ c) $u = 11.61$
   d) $w = 1.52$
6. a) $x = \frac{-9}{4}$ or $-2\frac{1}{4}$ b) $x = \frac{34}{5}$ or $6\frac{4}{5}$
   c) $p = \frac{27}{8}$ or $3\frac{3}{8}$ d) $e = \frac{-12}{5}$ or $-2\frac{2}{5}$
7. a) $K = 25.9$ b) $j = -16.5$
   c) $y = 4.471$ d) $n = 7.66$
8. a) 28 cm
   b) Example:



9. \$8.65 10. $\frac{41}{8}$ or $5\frac{1}{8}$ 11. a) 9.5 km/h b) 3.2 km/h

8.4 Solving Equations: $ax = b + cx$, $ax + b = cx + d$, $a(bx + c) = d(ex + f)$

1. False. To solve $7x + 5 = 3x - 11$ by the reverse order of operations, first subtract 5 from both sides of the equation.
2. False. The equation $2(4.5x + 3) = -5(3x - 1.3)$ becomes $9x + 6 = -15x + 6.5$ by using the distributive property.
3. True
4. a) $x = -1.4$ b) $n = 0.5$ c) $x = 2.5$ d) $y = -27.6$
5. a) $x = -\frac{3}{4}$ b) $c = \frac{10}{27}$ c) $x = \frac{13}{5}$ d) $w = \frac{7}{8}$
6. a) $x = 2.14$ b) $p = 0.56$ c) $m = -2.11$
7. a) $p = -4.5$ b) $x = -\frac{13}{5}$, $-2\frac{3}{5}$, or -2.6 c) $k = 3.7$
8. 8 weeks 9. $x = 7.2$ 10. a) 15.75 min b) 3.54 km
11. 19

8 Chapter Link

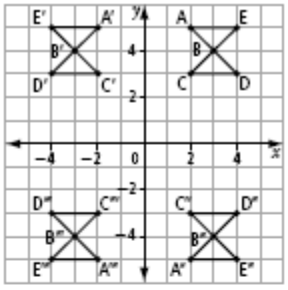
1. 2.5 km 2. 283 km 3. 157 km
4. No. Example: The left and right sides of $22.50 + 0.15d = 0.28d$ are not equal when d represents 170 km.
5. 49.09 km

8 Vocabulary Link

1. g) 2. c) 3. e) 4. b) 5. d) 6. a) 7. f)

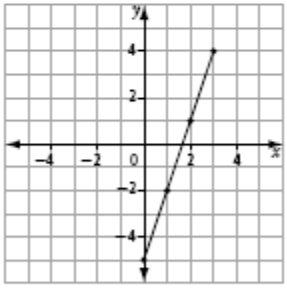
G	K	D	Z	C	D	U	T	D	O	B	I	I	N	N	U	I	E	T	I
E	H	S	N	O	I	T	A	R	E	P	O	E	T	I	S	O	P	P	O
Z	I	I	V	L	R	N	D	I	H	S	U	Z	U	L	P	I	Q	J	M
J	B	W	A	J	K	Y	S	S	T	J	U	G	M	X	P	A	U	G	K
N	U	M	E	R	I	C	A	L	C	O	E	F	F	I	C	I	E	N	T
P	B	K	P	L	X	R	Z	T	F	X	W	A	E	T	O	D	A	C	E
O	I	A	I	P	Z	X	X	R	A	H	I	W	R	K	S	X	T	M	Q
D	V	I	F	A	Q	N	D	Z	I	I	N	O	W	I	K	I	N	I	L
U	B	L	R	B	V	M	M	R	F	B	B	M	T	P	C	W	T	N	K
D	N	O	A	L	A	V	Z	X	K	U	V	H	F	W	A	Q	E	O	Q
R	U	W	C	E	R	Y	E	P	D	T	F	G	X	J	C	L	H	I	D
D	I	S	T	R	I	B	U	T	I	V	E	P	R	O	P	E	R	T	Y
Z	Q	L	I	B	A	R	T	P	A	I	J	M	N	L	M	C	C	A	P
H	F	O	O	M	B	A	X	F	A	V	H	S	Y	E	K	O	V	U	E
I	L	I	N	X	L	K	F	W	N	P	T	K	Z	U	M	F	V	Q	A
O	E	X	B	I	E	R	I	Z	V	A	P	F	J	T	R	X	U	E	L
L	G	E	A	V	L	B	I	B	N	O	U	T	V	H	I	Z	I	Q	A
R	Y	S	R	N	U	R	E	T	C	C	F	K	I	W	N	F	X	J	Z

Chapters 1–8 Review

1. a) $-7x^2 + 2x + 3$; 3, 2, trinomial
   b) $2p + 15$; 2, 1, binomial
2. a) \$380 b) $3\frac{3}{5}$ h or 3.6 h
3. a) 2 b) 4 c) 2 d) $\frac{1}{4}$ e) $\frac{1}{2}$
4. $6x - 2$
5. 

   A′(−2, 5), B′(−3, 4), C′(−2, 3), D′(−4, 3) E′(−4, 5)
   A″(2, −5), B″(3, −4), C″(2, −3), D″(4, −3), E″(4, −5)
   A‴(−2, −5), B‴(−3, −4), C‴(−2, −3), D‴(−4, −3), E‴(−4, −5)
6. Example: 10 tricycles, 1 children's bike, and 1 mountain bike; or 5 tricycles, 2 children's bikes, and 2 mountain bikes
7.

x	y
0	−5
1	−2
2	1
3	4



8. a) $c = \frac{35}{9}$ or $3\frac{8}{9}$ b) $g = 2$ c) $f = -1$ d) $r = \frac{7}{3}$ or $2\frac{1}{3}$ e) $b = -34$
9. $(-5)^5 = -3125$
10. a) the number of times the coin is flipped
    b) the number of possible outcomes
    c) HHH, HHT, HTH, TTT, THH, TTH, THT
    d) $2^{10} = 1024$