Date: _____

10.3 Tangents to a Circle

***MathLinks 9*, pages 394–403**

Key Ideas Review

Decide whether each of the following statements is true or false. Circle the word True or False. If the statement is false, rewrite it to make it true.

1. **True/False** A tangent never touches a circle.

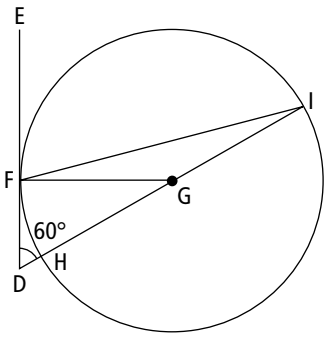
2. **True/False** The place a tangent touches a circle is called the perpendicular.

3. **True/False** A chord perpendicular to a tangent is the diameter of the circle.

4. **True/False** A tangent is perpendicular to the radius of a circle.

Check Your Understanding

5. In the diagram, DE is tangent to the circle at point F, FI is a chord, and $\angle FDG = 60°$. Explain your reasoning when answering each of the following questions.



a) What is the measure of $\angle DFG$?

b) What is the measure of central angle $\angle FGD$?

c) What is the measure of $\angle FHG$?

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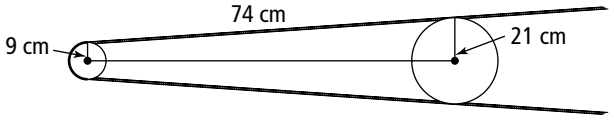
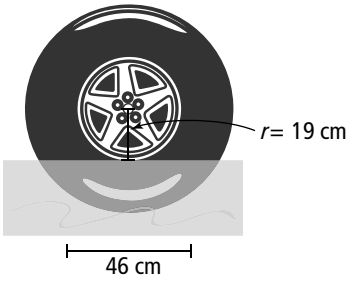
6. A rod is connected through the centre of these two pulleys. Calculate the length of the rod between the two centre points. Show your work. Express your answer to the nearest tenth.



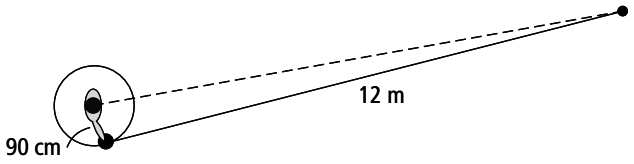
7. A car wheel is frozen in ice. The rim of the wheel has a radius of 19 cm. The chord formed by the ice is 46 cm.



a) How deep is the tire stuck in the ice to the nearest tenth? Show your thinking.

b) What angle is formed between the ice and the radius at the right edge of the tire? Explain your thinking.

8. a) Darcy threw a discus 12 m. His hand is 90 cm from the centre of his body. How far did the discus actually travel from the spot on which Darcy was standing? Express your answer to the nearest hundredth.



b) Explain the relationship of radius, diameter, and tangent using the situation above.

9. In the diagram, $\angle DEF = 75°$ and $\angle DCF = 150°$. Determine the measure of $\angle CFE$.