Section 10.3 Extra Practice
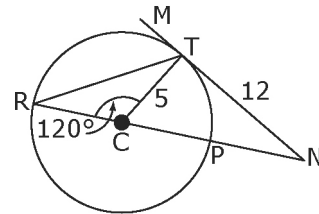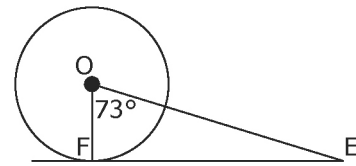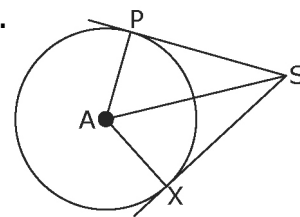
**1.** In the diagram, MN is tangent to the circle at T, the radius is 5 cm, TN is 12 cm, and ∠RCT = 120°.

a) What type of triangle is △RCT? Explain your answer.
b) What is the measure of ∠TRC?
c) What is the length of PN? Show your calculations.

2. a) In the diagram, EF is tangent to the circle at F, and the radius is OF.
What is the measure of ∠OEF?

b) In the diagram, SP is tangent to the circle at P. SX is tangent to the circle at X. SP = 6 cm, SA = 10 cm, and A is the centre of the circle. What is the length of AX?

3. On the map, DB is tangent to the circle at B, the diameter is BE, DB = 5 km, and △ABC is an equilateral triangle. The radius of the circle is 6 km.
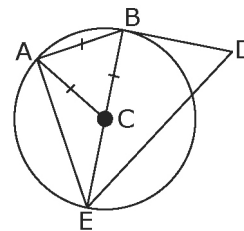
a) What is the length of BE?
b) Jorge starts at point D, cycles to E, and then to C. Sarah cycles to A, then to C, and then to E.
Who travels the shorter distance? By how much? Show your calculations.

4. Two concentric circles have radii of 24 cm and 26 cm. What is the length of the chord that is tangent to the inner circle? Include a sketch with your answer.

5. RT is tangent to each circle at S and R.
If OR = 9 m, PS = 3 m, ST = 6 m, and RT = 10 m, how far apart are the centres?
Round your answer to the nearest tenth of a metre.