Curriculum Outcomes:

(SS1) Solve problems and justify the solution strategy using circle properties, including: the perpendicular from the centre of a circle to a chord bisects the chord; the measure of the central angle is equal to twice the measure of the inscribed angle subtended by the same arc; the inscribed angles subtended by the same arc are congruent; a tangent to a circle is perpendicular to the radius at the point of tangency.

Student Friendly:
How we can use the tangent properties to solve for unknown lengths. (Tangent properties go hand and hand with Pythagorean theorem)

Wrap Up to Tangents

$\angle$ ___ = 90° (Tang P)

Only two ways to solve Tangent Problems:

1) Angle sum of a triangle (∠ sum Δ) (S A T T)

180° - 90° - given angle = unknown angle

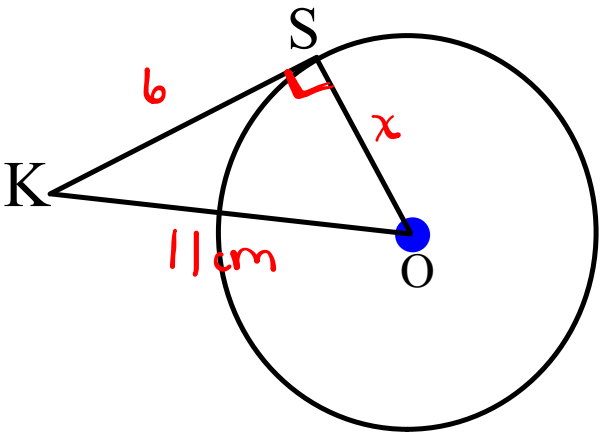
2) Pythagorean Theorem

$c=\sqrt{a^2 + b^2}$ Hypotenuse

$a= \sqrt{c^2 - b^2}$ Leg

Section 8.1 Warm Up

SK is a tangent determine the length of SO if given the following:
KO is 11cm and KS is 6 cm



SHOW ALL WORK AND COPY THIS DOWN

$\angle KSO = 90^\circ$ (Tang P)

SO ⇒ radius ⇒ leg

$a^2 = c^2 - b^2$

$a^2 = 11^2 - 6^2$

$a^2 = 121 - 36$

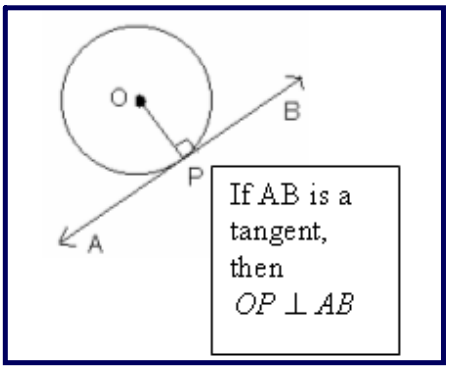
$\sqrt{a^2} = \sqrt{85}$

$a = 9.2$

Tangent Property:

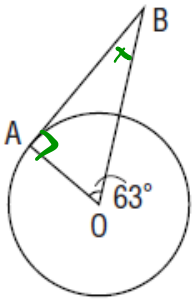
A tangent to a circle is perpendicular to the radius at the point of tangency. <APO = <BPO = 90°

(3)



Solving Problems Using the Tangent and Radius Property

Point O is the centre of a circle
and AB is a tangent to the circle.
In ΔOAB, ∠AOB = 63°
Determine the measure of ∠OBA.



▸ **A Solution**

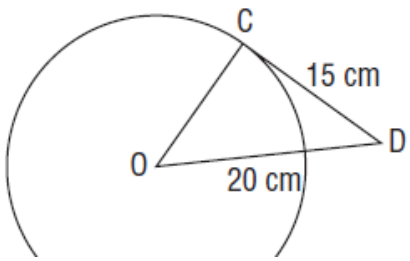
$\angle OAB = 90^\circ$ (Tang P)

$\angle OBA = 180 - 90^\circ - 63^\circ$

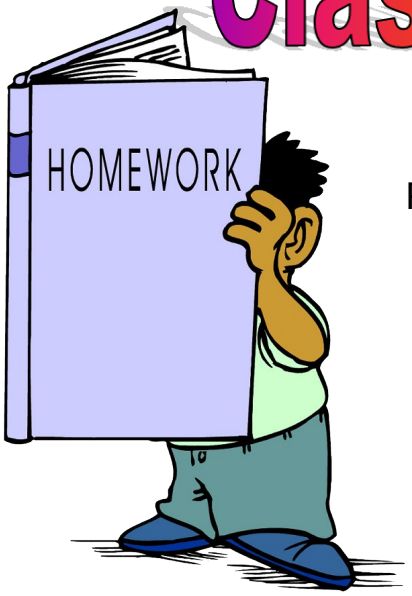
$= 27^\circ$ (SATT)

Solving Problems Using the Tangent and Radius Property

Point O is the centre of a circle
and CD is a tangent to the circle.
CD = 15 cm and OD = 20 cm
Determine the length of the radius OC.
Give the answer to the nearest tenth.



Class/Homework

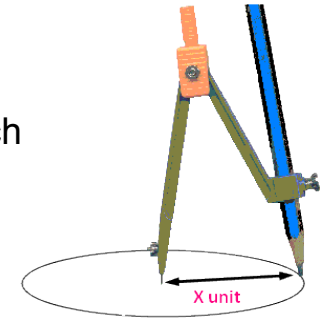


Page 388-390

Please provide sketches for each

3 ab
4a
5abc sketch
6abc sketch
7ab sketch

8
9
13
14
16 c
17
20 (try)



Attachments

Section 8.1 Sticky Note Activity.docx