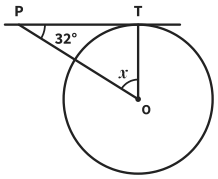
Circle Theorems: Tangents

1

PT is a tangent to the circle, centre O.
Find x.



Angle OTP = 90°

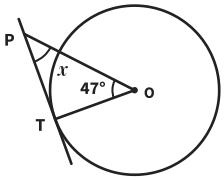
$x = 180 - 90 - 32$

Reason A tangent meets a radius at 90°.

$x =$ _____

2

PT is a tangent to the circle, centre O.
Find x.



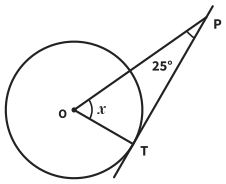
Angle OTP = 90°

Reason A tangent meets

$x =$ _____

3

PT is a tangent to the circle, centre O.
Find x.

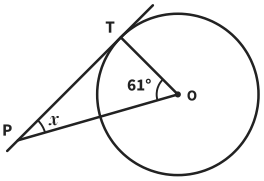


Reason A

$x =$ _____

4

PT is a tangent to the circle, centre O.
Find x.

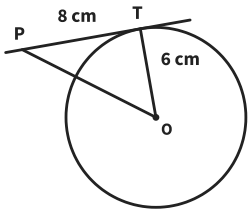


Reason

$x =$ _____

5

PT is a tangent to the circle, centre O.
Find OP.



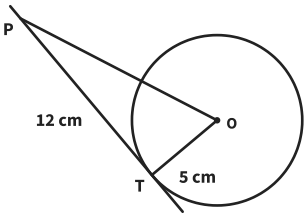
Angle OTP = 90°

$OP^2 = 6^2 + 8^2$

OP = _____

6

PT is a tangent to the circle, centre O.
Find OP.

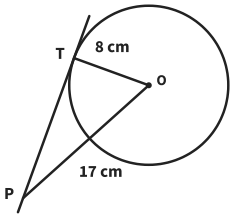


Angle OTP = 90°

OP = _____

7 *Notice the change!*

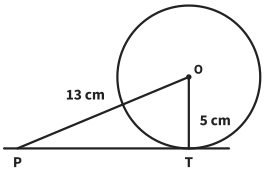
PT is a tangent to the circle, centre O.
Find PT.



PT = _____

8

PT is a tangent, centre O.
Ben says PT = 13 − 5 = 8 cm.
Explain his mistake and find PT.

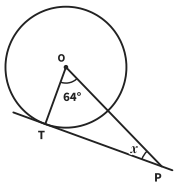


PT = _____

Circle Theorems: Tangents *further practice*

9

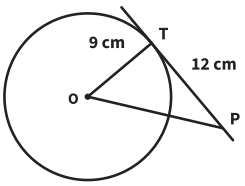
PT is a tangent to the circle, centre O.
Find x.



$x =$ _____

10

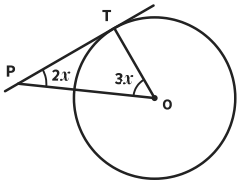
PT is a tangent to the circle, centre O.
Find OP.



OP = _____

11

PT is a tangent to the circle, centre O.
Find x.



$x =$ _____

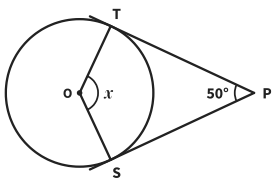
12

A wheel has radius 14 cm. A rope runs from a hook P, 50 cm from the centre of the wheel, and just touches the wheel at T. Find the length of rope PT.

Answer _____

13

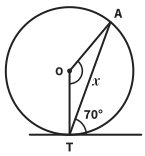
PT and PS are tangents to the circle, centre O. Find angle TOS, marked x.



Answer _____

14

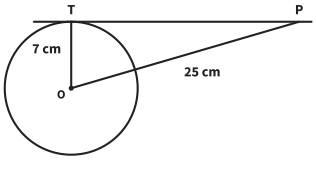
The line is a tangent at T, and O is the centre. The angle between the tangent and the chord TA is 70°.
Find angle TOA, marked x.



Answer _____

15

PT is a tangent to the circle, centre O.
Find the perimeter of triangle OTP.



Answer _____

16

PT is a tangent to a circle with centre O.
Explain why OP is always longer than PT.

So _____