Circle theorems: tangents and chords worksheet – Grade 9

Grade 9 · Mixed level · 20 questions · **Version X6895**

Name: _____ Date: _____ Score: ___ / 20

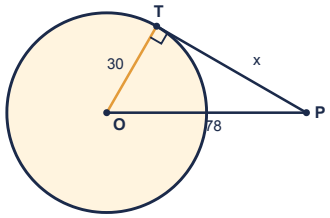
Scan to check answers + earn stars

Done the worksheet? Scan the code (or enter version X6895 on this skill's page at themathmeridian.com) to check your answers online and earn stars.

1. Two tangents are drawn from P. One is 60 cm long. How long is the other, in cm?

   Answer: _____ cm

2. PT is a tangent. OT = 30 and OP = 78. Find PT.

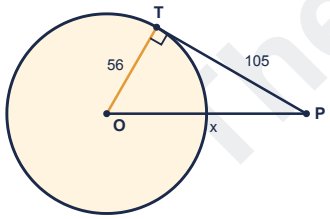


   Answer: _____

3. What is the angle between a tangent and the radius at the point of contact?

   A. 90° **B.** 45° **C.** 180° **D.** 60°

4. PT is a tangent. PT = 105 and OT = 56. Find OP.



   Answer: _____

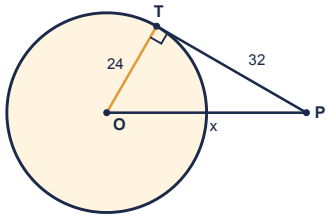
5. A line from the centre is perpendicular to a chord. What does it do to the chord?

   A. Cuts it in half **B.** Doubles it **C.** Leaves it unchanged **D.** Makes it a diameter

The Math Meridian

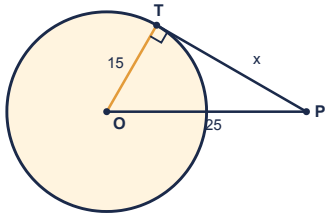
© The Math Meridian · themathmeridian.com · Free for personal and classroom use

6. PT is a tangent. PT = 32 and OT = 24. Find OP.



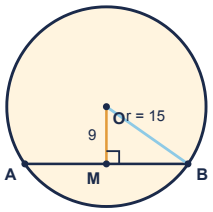
Answer: _____

7. PT is a tangent. OT = 15 and OP = 25. Find PT.



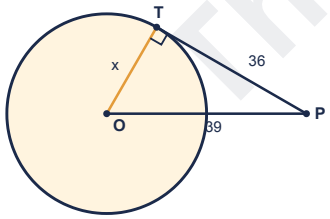
Answer: _____

8. A chord is 9 from the centre of a circle of radius 15. How long is the chord?



Answer: _____

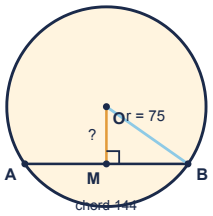
9. PT is a tangent. PT = 36 and OP = 39. Find the radius.



Answer: _____

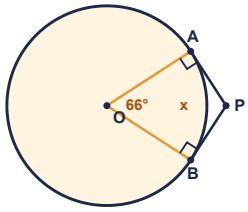
The Math Meridian

10. A chord of length 144 is in a circle of radius 75. How far is it from the centre?



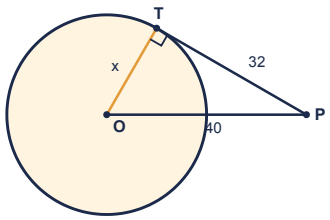
Answer: _____

11. Two tangents from P touch at A and B. ∠AOB = 66°. Find ∠APB, in degrees.



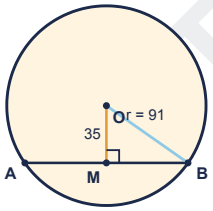
Answer: _____ °

12. PT is a tangent. PT = 32 and OP = 40. Find the radius.



Answer: _____

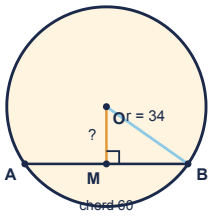
13. A chord is 35 from the centre of a circle of radius 91. How long is the chord?



Answer: _____

The Math Meridian

14. A chord of length 60 is in a circle of radius 34. How far is it from the centre?



Answer: _____

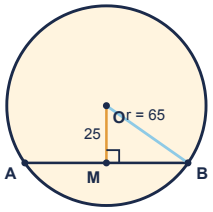
15. A belt runs around two wheels of equal radius 54 cm, with centres 180 cm apart. How long is each straight part of the belt, in cm?

Answer: _____ cm

16. A wheel rests on flat ground. What is the angle between the spoke to the contact point and the ground?

A. 90° **B.** 180° **C.** 45° **D.** It depends on the wheel

17. A circular window has radius 65 cm. A horizontal bar is 25 cm from the centre. How long is the bar, in cm?



Answer: _____ cm

18. A person's eyes are 5 m above the sea. Using a tangent and an Earth radius of 6,400 km, how far is the horizon, to the nearest tenth of a km?

Answer: _____

19. A circle sits inside a triangle, touching all three sides. From the corners, the tangent lengths are 10, 7 and 4. What is the perimeter of the triangle?

Answer: _____

20. A belt runs around two wheels of equal radius 32 cm, with centres 136 cm apart. How long is each straight part of the belt, in cm?

Answer: _____ cm

The Math Meridian

Answer key · Version X6895

Circle theorems: tangents and chords worksheet – Grade 9 · Grade 9 · to reprint this sheet or check the answers, enter X6895 on the skill page.

1. **60**
2. **72**
3. **A (90°)**
4. **119**
5. **A (Cuts it in half)**
6. **40**
7. **20**
8. **24**
9. **15**
10. **21**
11. **114**
12. **24**
13. **168**
14. **16**
15. **180**
16. **A (90°)**
17. **120**
18. **8**
19. **42**
20. **136**

The Math Meridian