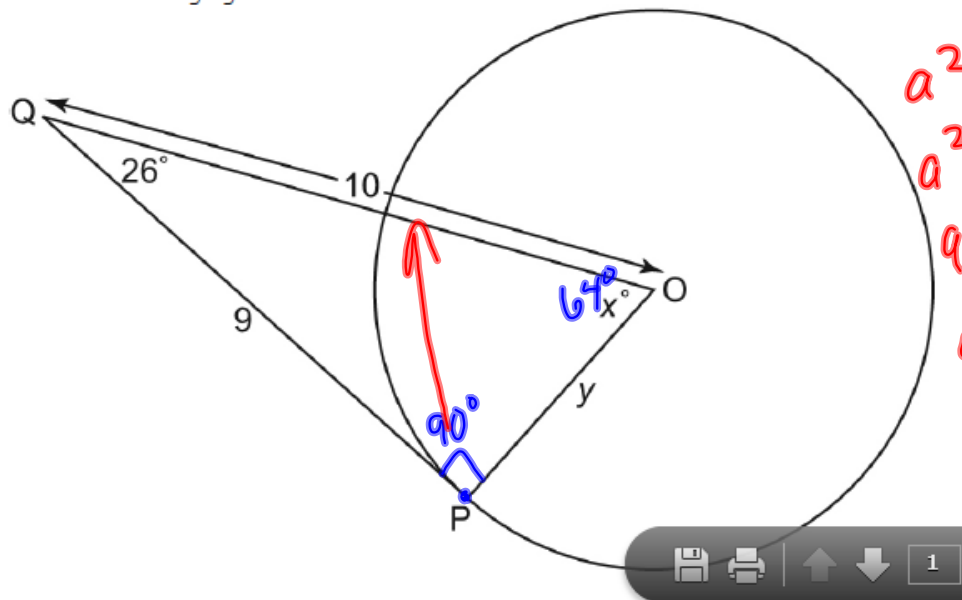


Warm-Up Part 1

1. Point O is the centre of the circle.
 Point P is a point of tangency.
 Determine the values of x° and y .
 Justify your solutions.



$$c^2 = a^2 + b^2$$

$$90^\circ + 26^\circ + \underline{64^\circ} = 180^\circ$$

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

$$a^2 = 100 - 81$$

$$a^2 = 19$$

$$a = 4.358$$

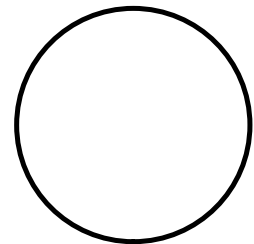
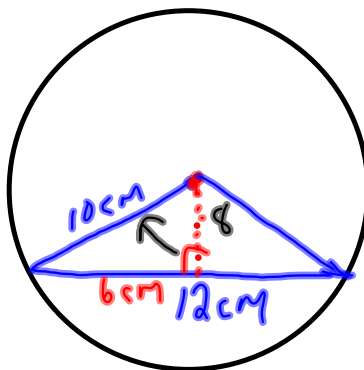
$$4.36$$

$$4.4$$

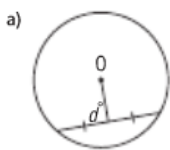
Warm-Up Part 2

A circle with radius 10 cm has a chord with length 12 cm.
How far from the centre of the circle is the chord?
Draw a diagram to support your solution.

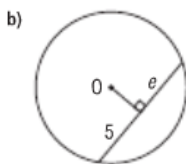
$$\begin{aligned}a^2 &= c^2 - b^2 \\ &= 10^2 - 6^2 \\ &= 100 - 36 \\ c^2 &= 64 \\ c &= 8\end{aligned}$$



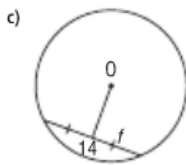
3. Point O is the centre of each circle.
 Determine the values of d° , e , and f .



$$d^\circ = 90^\circ$$

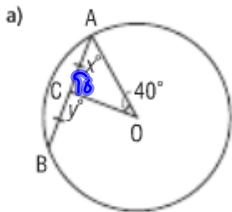


$$e = 5$$



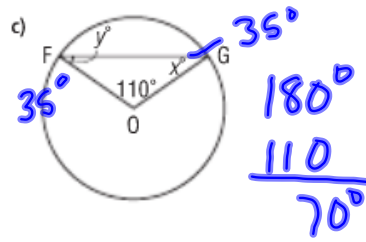
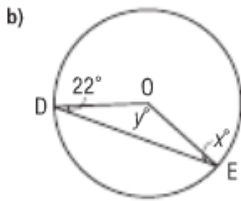
$$f = 7$$

4. Point O is the centre of each circle.
Determine each value of x° and y° .

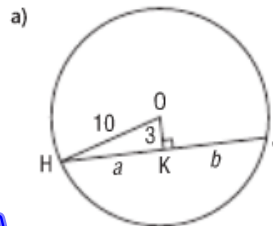


$$y^\circ = 90^\circ$$

$$90 + 40 + \frac{50^\circ}{x} = 180$$



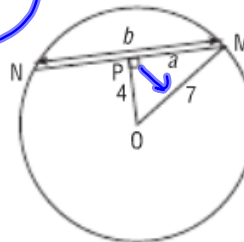
5. Point O is the centre of each circle.
Determine each value of a and b .



$$a = 9.5$$

$$b = 9.5$$

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$$b = 11.48$$

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

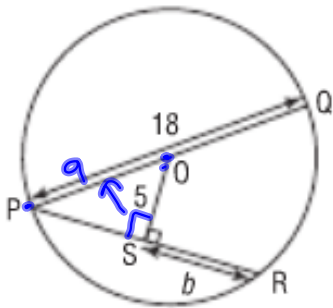
$$a^2 = 7^2 - 4^2$$

$$a^2 = 49 - 16$$

$$a^2 = 33$$

$$a = 5.74$$

6. Point O is the centre of the circle. Determine the value of b . Which circle properties did you use?



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

$$a^2 = 9^2 - 5^2$$

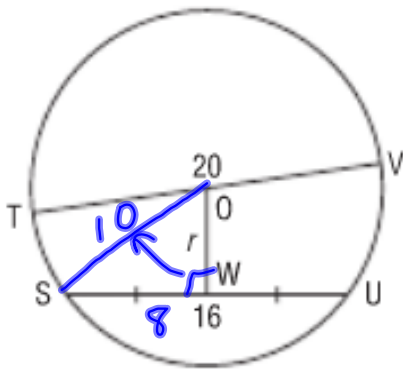
$$a^2 = 81 - 25$$

$$a^2 = 56$$

$$a = 7.5$$

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b

b)

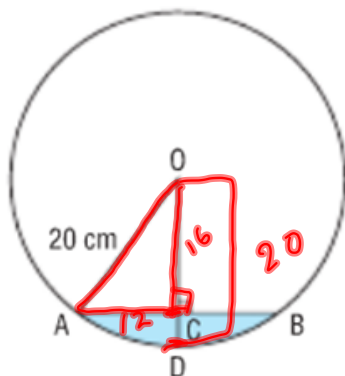


$$\begin{aligned}a^2 &= c^2 - b^2 \\ &= 10^2 - 8^2 \\ &= 100 - 64 \\ a^2 &= 36 \\ a &= 6\end{aligned}$$

$$r = 6$$

The radius of the pipe below is 20 cm. Water fills less than one-half of the pipe. The surface of the water AB is 24 cm wide.

Determine the maximum depth of the water, which is the depth CD.



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

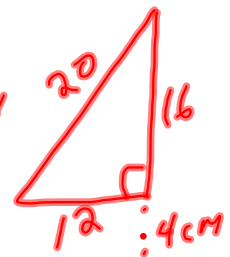
$$a^2 = 20^2 - 12^2$$

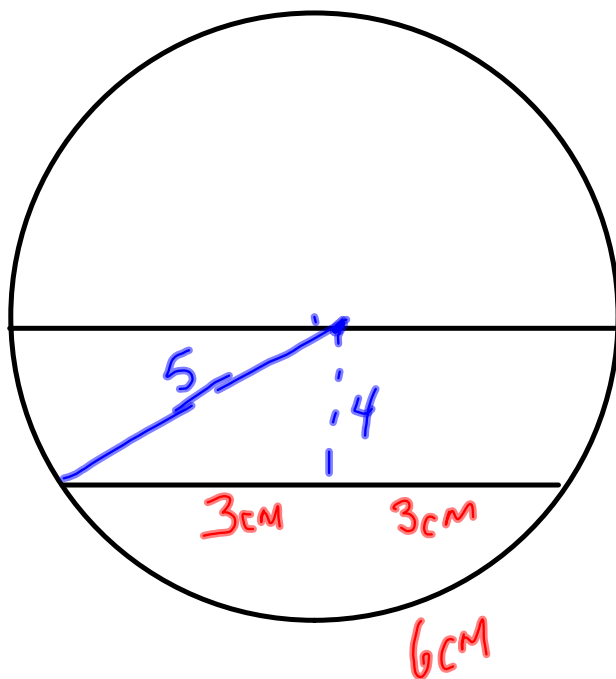
$$a^2 = 400 - 144$$

$$a^2 = 256$$

$$a = 16$$

$$CD = 4$$





If the diameter is 10 cm how long is the chord If it is 4 cm from the center to the chord?

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

$$a^2 = 5^2 - 4^2$$

$$a^2 = 25 - 16$$

$$a^2 = 9$$

$$a = 3$$

Homework

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7[a], 10, 11, 14, 15