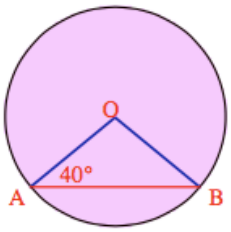
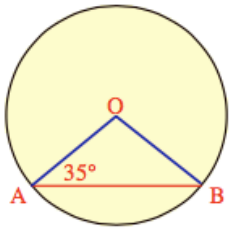
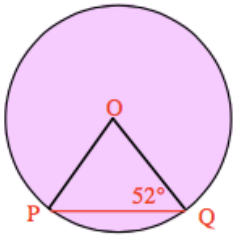
Triangles in circles

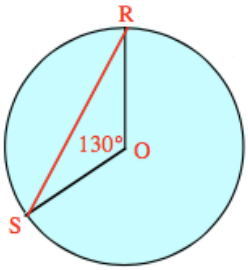
1. Calculate the sizes of the angles in triangle OAB shown opposite.

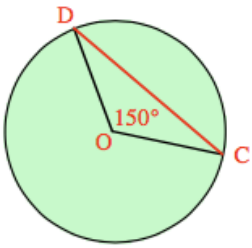


2. Find the missing angles in each of these :-

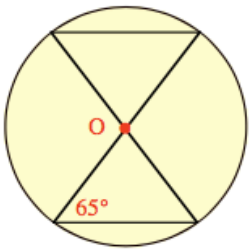


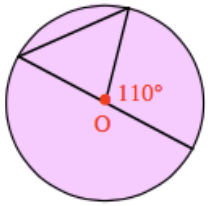


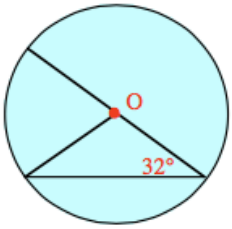


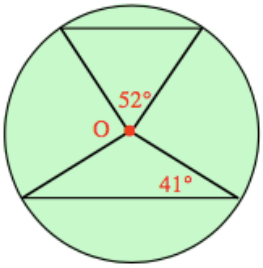


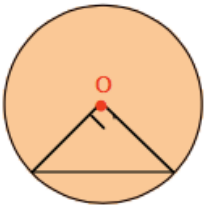
3. Use a coin to sketch each of these circles and fill in all the missing angles :-

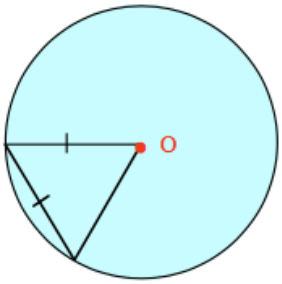


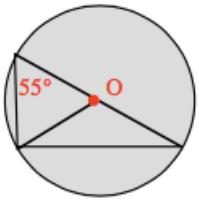


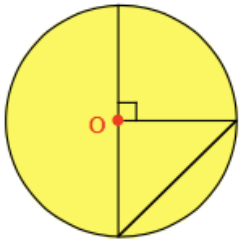


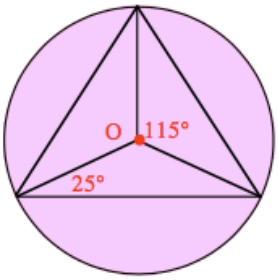


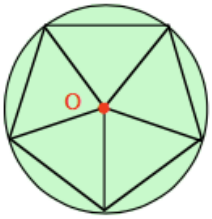


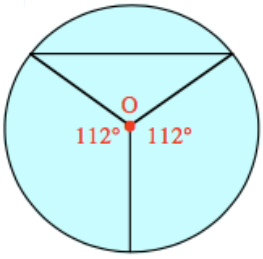


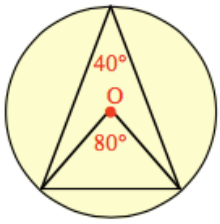






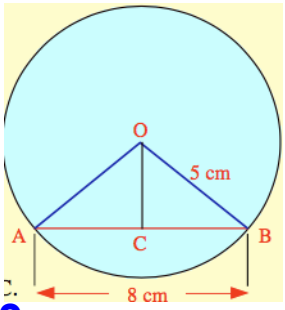






Circle Worksheets

1. Copy and complete :-



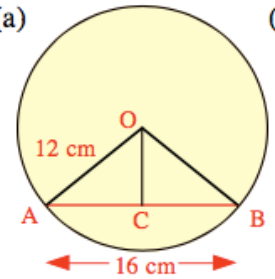
$OC^2 = OB^2 - CB^2$

$OC^2 = 5^2 - 4^2$

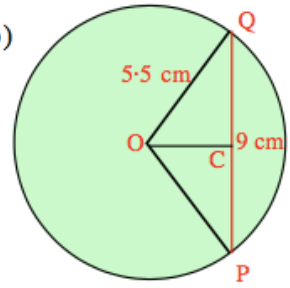
etc.

2. Use Pythagoras' Theorem to calculate the length of OC, to the nearest millimetre, in each diagram below :-

(a)

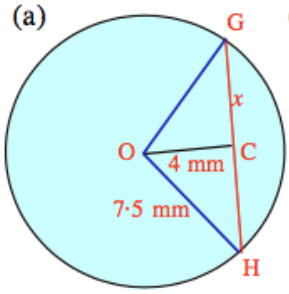


(b)

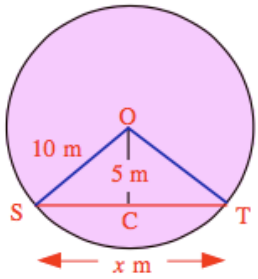


3. Calculate the value of x in each of these :-

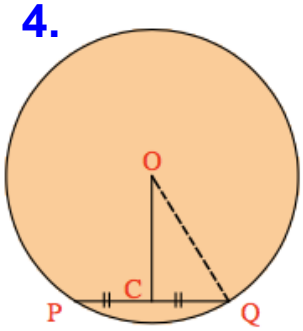
(a)



(b)



4.



In this circle, chord PQ is 10 cm and the line OC is 12 cm long.

Calculate the **area** of the circle.

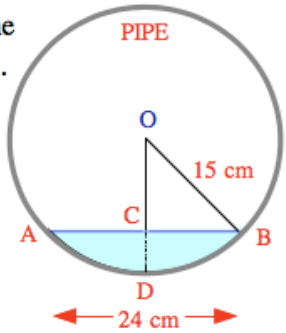
5. A horizontal pipe has some water in it to a depth (CD).

The surface AB is 24 cm.

The radius OB of the circle is 15 cm.

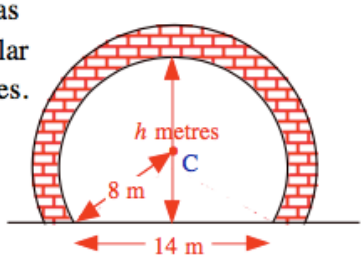
(a) Calculate the length of the line OC.

(b) Now write down the depth of the water CD.



6. A tunnel entrance has centre C and a circular arc of radius 8 metres.

Calculate the height of the tunnel entrance.

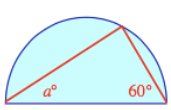


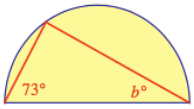
Perpendicular bisectors

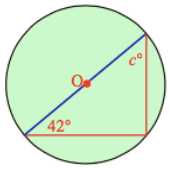
Circle Worksheets

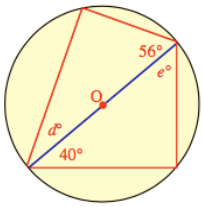
Angles in semi-circles

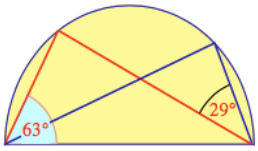
Calculate the values of a, b, c, d and e in each of the following :-

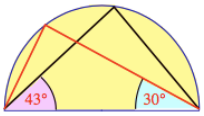


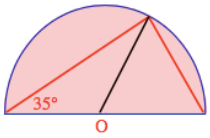




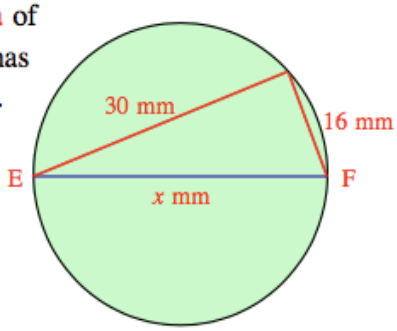






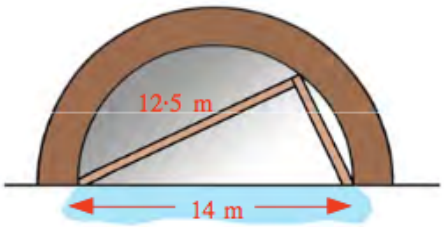


Calculate the **area** of this circle, which has EF as its diameter.



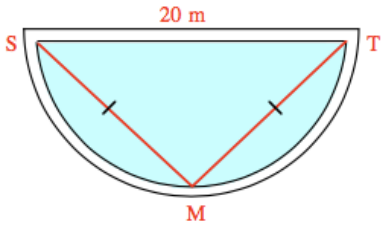
An entrance to a tunnel, through which water flows, is in the shape of a semi-circle.

Two wooden beams are used to support it while work is being carried out on the tunnel.



What is the length of the second supporting pole?

A semi-circular swimming pool has a diameter of 20 metres.

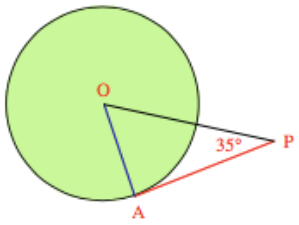


Lucy swims from T to M, then from M to S.
Josh walks directly from T to S.

How much further has Lucy travelled than Josh ?

Circle Worksheets

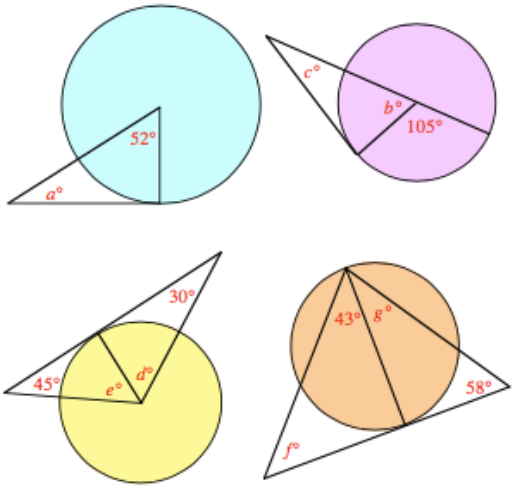
1. PA is a tangent to this circle, meeting it at the point A.



(a) What is the size of ∠PAO ?

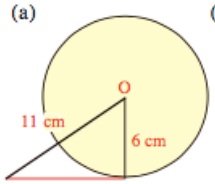
(b) Write down the size of ∠POA.

2. 2. Write down the values of $a, b, \ldots . g$.

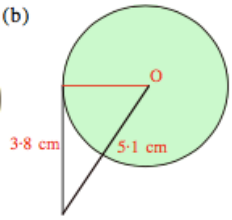


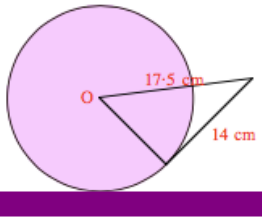
3. Determine the lengths of the **red** lines.

(a)



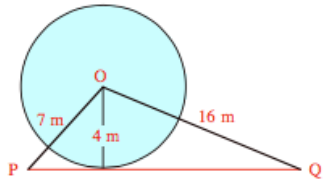
(b)



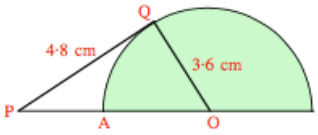


Calculate the **area** of this circle.

4. Determine the length of the tangent PQ.

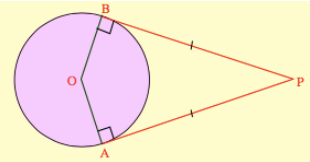


5. Determine the length of the line PA.
(*Hint :- find the length of PO first*).



Tangents to circles

Circle Worksheets

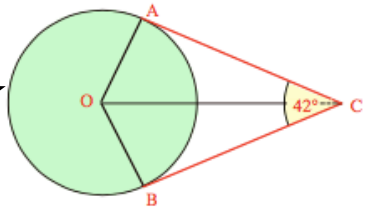


Kites tangent to circles

unit test style

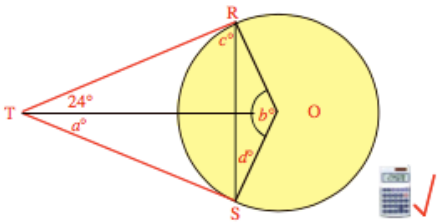
1. Look at the tangent kite at the top of the page. If ∠APB = 55°, calculate the size of ∠AOB.

2. Make a neat sketch of this tangent kite.



Given that ∠ACB = 42°, calculate the sizes of all the missing angles.

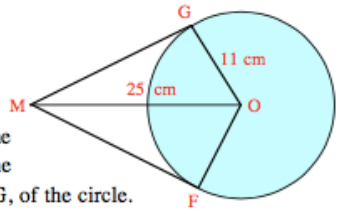
3. Write down the values of a, b, c and d.



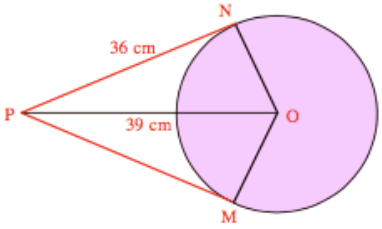
4. The radius, OG, of this circle is 11 cm long.

M is 25 cm away from centre O.

Calculate the length of the tangent, MG, of the circle.

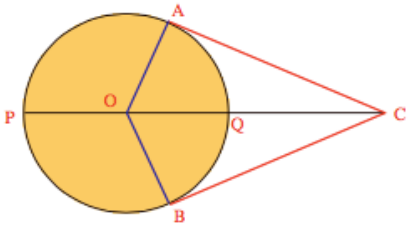


5. P is a point, 39 cm away from the centre O of this circle. The tangent PN is 36 cm long.



Calculate the **area** of the circle with centre O.

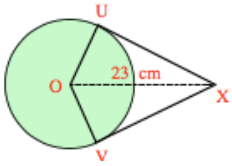
6. Diameter PQ = 20 cm and QC = 18 cm.



(a) Use the above information to write down the size of (i) the radius (ii) the line OC.

(b) Calculate the length of the tangent AC.

7. The **circumference** of this circle is 60 cm and the distance from O to X is 23 cm.



Calculate the length of the **perimeter** of the tangent kite OUXV.

(*Find the radius first !*)