AMDG

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Adv Geo –
Fri 22 Feb 2013

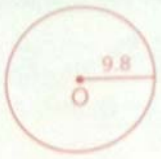
9.2: Introduction to Circles

Objective: You will be able to begin solving problems involving circles.

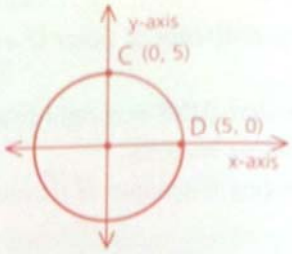
Part Three: Problem Sets

Problem Set A

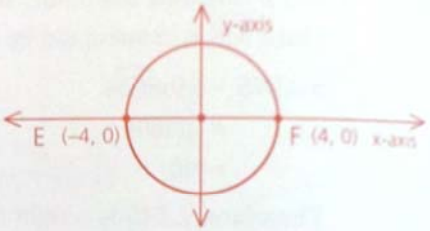
1 Find the circumference and the area of ⊙O.



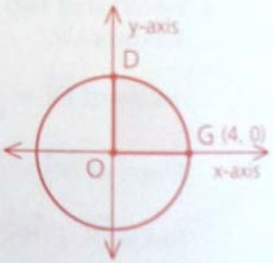
2 Given: Diagram as marked
Find: **a** The measure of the arc from C to D ($m\overset{\frown}{CD}$)
b The length of $\overset{\frown}{CD}$



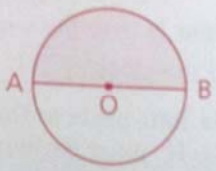
3 Given: Diagram as marked
Find: **a** $m\overset{\frown}{EF}$
b The length of $\overset{\frown}{EF}$ to the nearest tenth



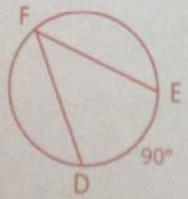
4 Given: Diagram as marked
Find: **a** The coordinates of D
b The area of the shaded region (sector DOG)



5 If AB = 10, what is the area of the shaded region (sector AOB)?



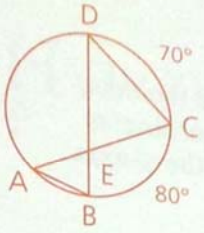
6 Find m∠F.



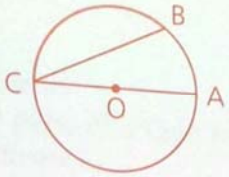
7 Given: Diagram as marked

Find: **a** $m\angle A$

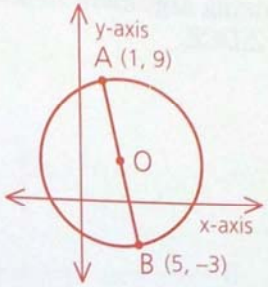
b $m\angle D$



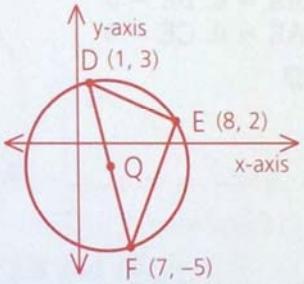
8 In $\odot O$, $m\overset{\frown}{AB} = 50$. Find $m\overset{\frown}{BC}$ and $m\angle BCA$.



9 In the figure shown, $\overline{AB}$ is a diameter. Find the coordinates of point O, the center of the circle.



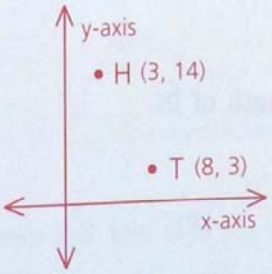
10 Find the coordinates of Q, the center of the circle. Then use slopes to show that $\triangle DEF$ is a right triangle.



11 Copy the diagram, reflecting H across the y-axis to H′. Then find

a The coordinates of H′

b The slope of $\overleftrightarrow{TH'}$



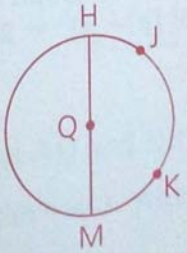
Problem Set B

12 In $\odot Q$, $m\overset{\frown}{HJ} = 20$ and $m\overset{\frown}{MK} = 40$. The circumference of $\odot Q$ is 27π.

a Find $m\overset{\frown}{JK}$.

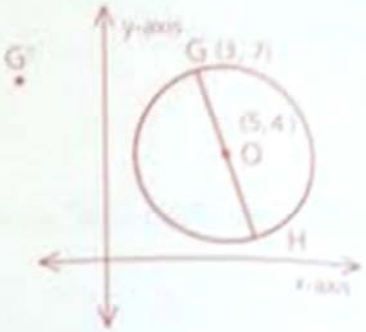
b Find the length of $\overset{\frown}{JK}$.

c Find HM (the length of $\overline{HM}$).

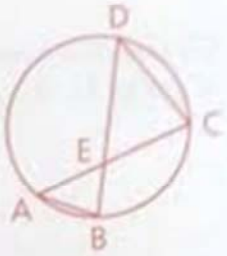


Problem Set B, *continued*

13 Use the diagram of ⊙O to find the coordinates of H. Then find the coordinates of G', the reflection of G over the y-axis.

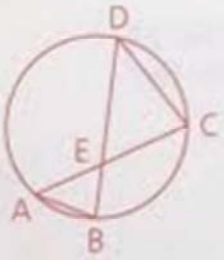


14 Write a convincing argument to show that $\triangle ABE \sim \triangle DCE$.



15 Given: AB = 4, BE = 5,
AE = 6, CE = 3

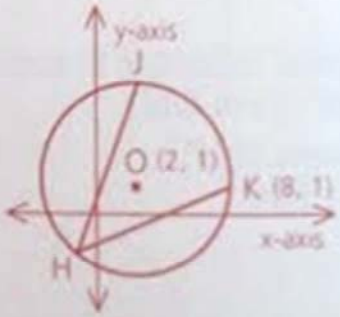
Find: CD



16 In the diagram of ⊙O at the right, $\angle JHK = 45°$.

a Find $m\widehat{JK}$.

b Find the length of $\widehat{JK}$.



17 Verify by substitution that point A = (5, 8) is on the circle that is the graph of the equation $(x - 2)^2 + (y - 4)^2 = 25$.