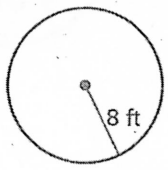
Geometry- Mrs. Tilus Name: Key

Unit 11- Worksheet #4: Circumference and Arc Length

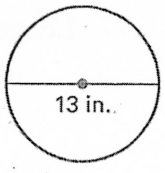
Use the diagram to find the indicated measure.

1. Find the circumference



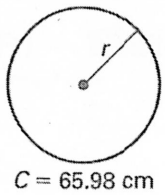
$C = 50.3$ ft

2. Find the circumference



$C = 40.8$ in

3. Find the radius



$r = 10.5$ cm

Find the indicated measure.

4. The **exact** radius of a circle with circumference 42 meters.

$r = \frac{21}{\pi}$ m

5. The **exact** diameter of a circle with circumference 39 cm.

$d = \frac{39}{\pi}$ cm

6. The **exact** circumference of a circle with a 15 in diameter

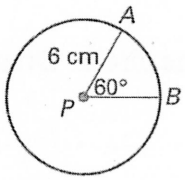
$C = 15\pi$ in

7. The **exact** circumference of a circle with a 27 ft radius.

$C = 54\pi$ ft

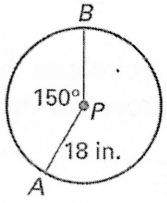
Find the length of $\overset{\frown}{AB}$.

8.



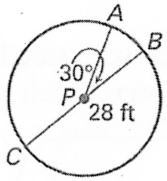
Arc Length $\overset{\frown}{AB} = 6.3$ cm

9.



Arc Length $\overset{\frown}{AB} = 47.1$ in

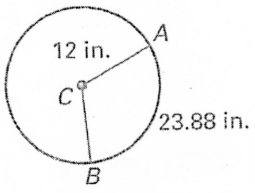
10.



Arc Length $\overset{\frown}{AB} = 7.3$ ft

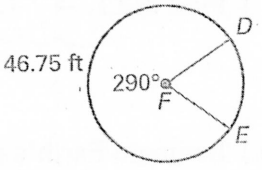
Find the indicated measure.

11. $m\overset{\frown}{AB}$



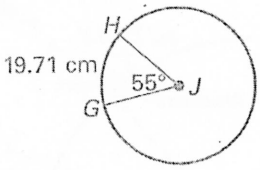
$m\overset{\frown}{AB} = 114.0°$

12. Circumference of $\odot F$



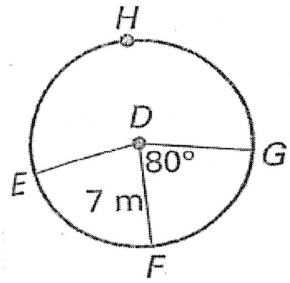
$C = 58.0$ ft

13. Radius of $\odot J$



$r = 20.5$ cm

In $\odot D$ shown below, $\angle EDF \cong \angle FDG$. Find the indicated measure.



14. $m\widehat{EFG}$ = 160°

15. $m\widehat{EHG}$ = 200°

16. Length of $\widehat{EFG}$ = 19.5m

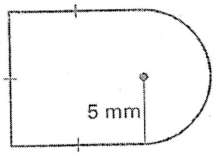
17. Length of $\widehat{EHG}$ = 24.4m

18. $m\widehat{EHG}$ → m $\widehat{EHF}$ = 280°

19. Length of $\widehat{FEG}$ = 34.2°

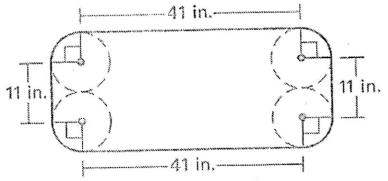
Find the perimeter of the region.

20.



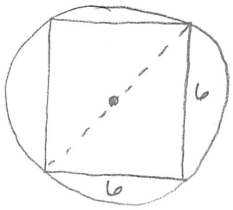
P = 45.7mm

21.



P = 138.4in

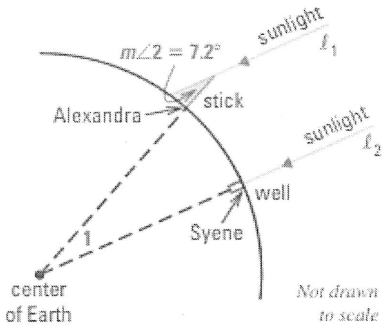
22. A square with side length 6 cm is inscribed in a circle so that all four vertices are on the circle. Draw a sketch to represent this problem. Find the circumference of the circle.



diagonal = diameter

C = 26.7 cm

23. Over 2000 years ago, the Greek scholar Eratosthenes estimated Earth's circumference by assuming that the Sun's rays are parallel. He chose a day when the Sun shone straight down into a well in the city of Syene. At noon, he measured the angle the Sun's rays made with a vertical stick in the city of Alexandria. Eratosthenes assumed that the distance from Syene and Alexandira was about 575 miles



a.) Find $m\angle 1$. = 7.2°

b.) Estimate Earth's circumference = 28,750 miles