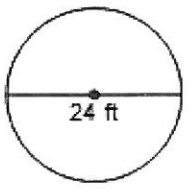
9.4 Circles and Arcs NAME: Answer Key

CORRECTIVE ASSIGNMENT DATE: 5/13/16

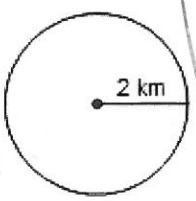
Find the area of each. Leave in the terms of pi.

1) 

$A = \pi r^2$

$\pi 12^2$

$A = 144\pi \text{ ft}^2 \approx 452.389 \text{ ft}^2$

2) 

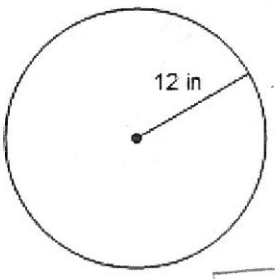
$A = 4\pi$

$\approx 12.5664 \text{ km}$

3) radius = 5 ft

4) diameter = 18 cm

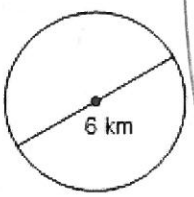
Find the circumference of each circle. Round your answer to the nearest tenth.

5) 

$C = \pi d$

$= 24\pi \text{ in}$

$\approx 75.3982 \text{ in}$

6) 

$C = 6\pi \text{ km}$

$\approx 18.8496 \text{ km}$

7) radius = 4 km

$C = 8\pi \text{ km}$

$\approx 25.1327 \text{ km}$

8) diameter = 12 m

$C = 12\pi \text{ m}$

$\approx 37.6991 \text{ m}$

Find the radius of each circle. Round your answer to the nearest tenth.

9) area = 201.1 m²

$A = \pi r^2$

$r = \sqrt{\frac{201.1}{\pi}}$ $\quad \frac{201.1}{\pi} = \frac{\pi r^2}{\pi}$

$r = \pm 8...$

$r \approx 8.0008 \text{ m}$

10) circumference = 56.5 cm

$C = d\pi$

$56.5 = d\pi$

$d = 17.9845$

$r = 8.9923 \text{ cm}$

Find the radius of each circle.

11) area = 64π ft²

$A = \pi r^2$

$64\pi = \pi r^2$

$64 = r^2$ $\quad r = \pm 8$

$r = 8$

12) circumference = 12.6 cm

$12.6 = d\pi$

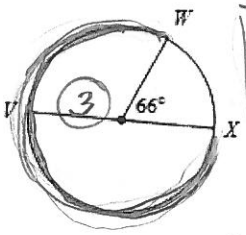
$d = 4.0107...$

$r = 2.0054 \text{ cm}$

length of the arc = % of Circumference

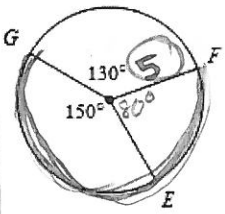
Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

13) $m\overset{\frown}{XVW} = 294^\circ$



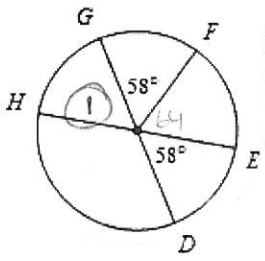
Arc length $= \frac{49\pi}{10} \approx 15.3938$

14) $m\overset{\frown}{FEG} = 230^\circ$



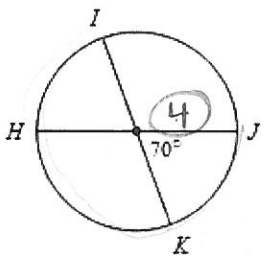
Arc length $= \frac{115\pi}{18} \approx 20.0713$

15) $m\overset{\frown}{FEH} = 244^\circ$



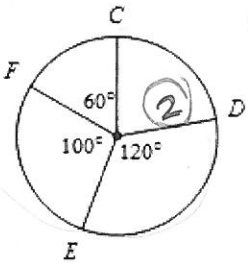
Arc length $= \frac{61\pi}{45} \approx 4.2586$

16) $m\overset{\frown}{JKI} = 250^\circ$



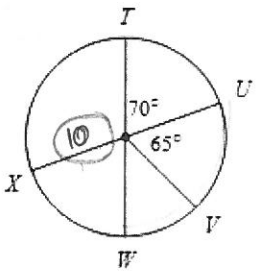
$= \frac{50\pi}{9} \approx 17.4533$

17) $m\overset{\frown}{CDF} = 300^\circ$



$= \frac{10\pi}{3} \approx 10.4719$

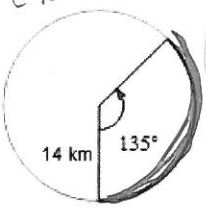
18) $m\overset{\frown}{UW} = 110^\circ$



$= \frac{55\pi}{9} \approx 19.1986$

Find the length of each arc. Round your answers to the nearest ~~tenth~~ 4 decimals

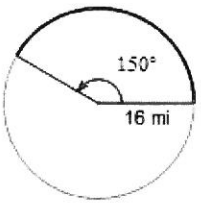
19) $C \approx 87.9645$



$\left(\frac{135}{360}\right) 28\pi$

$= \frac{21\pi}{2}$ km ≈ 32.9867 km

20)

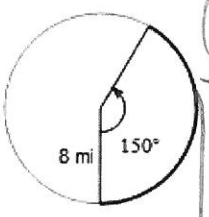


Arc $= \frac{150}{360} \cdot 32\pi$

$= \frac{40\pi}{3}$ mi ≈ 41.8879

Find the length of each arc. Leave your answer in terms of pi.

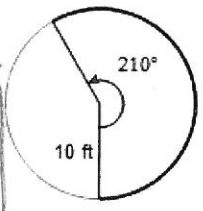
21)



$\left(\frac{150}{360}\right)(16\pi)$

Arc $= \frac{20\pi}{3}$ mi ≈ 20.94395 mi

22)



$\frac{210}{360} \cdot 20\pi$

Arc $= \frac{35}{3}\pi$ ft ≈ 36.6519 ft