Name Answer Key

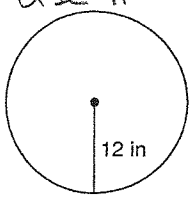
Date _____ Period 5

Circumference and Area of Circles

Find the area of each.

Round your answer to the nearest tenth.

1) use π



$A = \pi r^2$

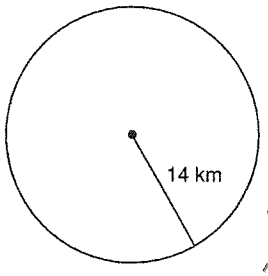
$A = \pi (12)^2$

$A = \pi \cdot 144$

$A = 452.38934$

$\boxed{A = 452.4}$

2) use 3.14



$A = \pi r^2$

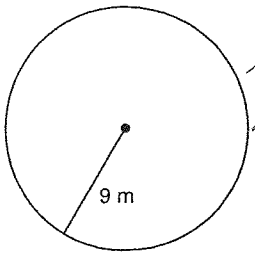
$A = \pi (14)^2$

$A = 3.14 (14)^2$

$A = 3.14 \cdot 196$

$\boxed{A = 615.4}$

3) use $\frac{22}{7}$



$A = \pi r^2$

$A = \frac{22}{7} (9)^2$

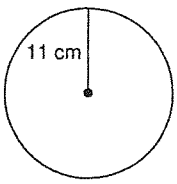
$A = \frac{22}{7} \cdot 81$

$A = \frac{1782}{7}$

$A = 254.5714$

$\boxed{A = 254.6}$

4) use π



$A = \pi r^2$

$A = \pi (11)^2$

$A = \pi \cdot 121$

$A = 380.13271$

$\boxed{A = 380.1}$

5) radius = 2.6 in
use 3.14

$A = \pi r^2$

$A = 3.14 (2.6)^2$

$A = 3.14 \cdot 6.76$

$A = 21.2264$

$\boxed{A = 21.2}$

6) radius = 34.1 in
use $\frac{22}{7}$

$A = \pi r^2$

$A = \frac{22}{7} (341)^2$

$A = \frac{22}{7} \cdot 1162.81$

$A = 3654.5457$

$\boxed{A = 3654.5}$

7) radius = 13.2 km
use π

$A = \pi r^2$

$A = \pi (13.2)^2$

$A = \pi \cdot 174.24$

$A = 547.3911$

$\boxed{A = 547.4}$

8) radius = 29.9 km
use π

$A = \pi r^2$

$A = \pi (29.9)^2$

$A = \pi (894.01)$

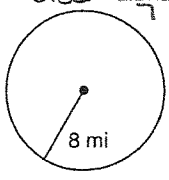
$A = 2808.6015048$

$\boxed{A = 2808.6}$

Find the circumference of each circle.

Round your answer to the nearest tenth.

9) use $\frac{22}{7}$



$C = 2r\pi$

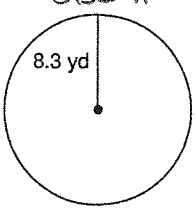
$C = 2(8)(\frac{22}{7})$

$C = \frac{352}{7}$

$C = 50.2857$

$\boxed{C = 50.3}$

10) use π



$C = 2r\pi$

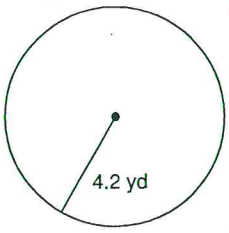
$C = 2(8.3)\pi$

$C = 16.6\pi$

$C = 52.150438$

$\boxed{C = 52.2}$

11) use 3.14



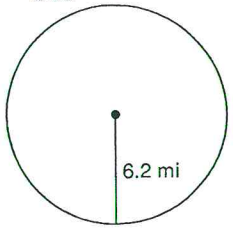
$C = 2r\pi$

$C = 2(4.2) \cdot 3.14$

$C = 26.376$

$\boxed{C = 26.4}$

12) use π



$C = 2r\pi$

$C = 2(6.2)\pi$

$C = 38.9557$

$\boxed{C = 39.0}$

13) radius = 5.2 ft

use $\frac{22}{7}$

$C = 2r\pi$

$C = 2(5.2)\left(\frac{22}{7}\right)$

$\boxed{C = 32.7}$

14) radius = 11.1 ft

use 3.14

$C = 2r\pi$

$C = 2(11.1)(3.14)$

$\boxed{C = 69.7}$

15) radius = 9.5 in

use π

$C = 2r\pi$

$C = 2(9.5)(\pi)$

$\boxed{C = 59.7}$

16) radius = 9.3 in

use π

$C = 2r\pi$

$C = 2(9.3)(\pi)$

$\boxed{C = 58.4}$

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

17) circumference = 62.8 mi

use π

$C = 2r\pi$

$\frac{62.8}{2\pi} = \frac{2r\pi}{2\pi}$

$C = 9.9949$

$\boxed{C = 10.0}$

18) circumference = 69.1 yd

use 3.14

$C = 2r\pi$

$\frac{69.1}{2 \cdot 3.14} = \frac{2r(3.14)}{2 \cdot 3.14}$

$\boxed{r = 11.0}$

19) circumference = 12.6 yd

use $\frac{22}{7}$

$C = 2r\pi$

$\frac{12.6}{2 \cdot \frac{22}{7}} = \frac{2r\frac{22}{7}}{2 \cdot \frac{22}{7}}$

$\boxed{r = 2.0}$

20) circumference = 25.1 ft

use π

$C = 2r\pi$

$\frac{25.1}{2\pi} = \frac{2r\pi}{2\pi}$

$r = 3.994$

$\boxed{r = 4.0}$

Find the diameter of each circle. Use your calculator's value of π. Round your answer to the nearest tenth.

21) area = 201.1 in²

$A = \pi r^2$

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

$64.01 = r^2$

$\boxed{r = 8}$

22) area = 78.5 ft²

$A = \pi r^2$

$\frac{78.5}{\pi} = \frac{\pi r^2}{\pi}$

$24.987 = r^2$

$\boxed{r = 5}$

Find the circumference of each circle.

23) area = 64π mi²

$A = \pi r^2$

$\frac{64\pi}{\pi} = \frac{\pi r^2}{\pi}$

$64 = r^2$

$r = 8$

$C = 2r\pi$

$C = 2(8)\pi$

$\boxed{C = 16\pi}$

24) area = 16π in²

$A = \pi r^2$

$\frac{16\pi}{\pi} = \frac{\pi r^2}{\pi}$

$r^2 = 16$

$r = 4$

$C = 2r\pi$

$C = 2(4)\pi$

$\boxed{C = 8\pi}$

Find the area of each.

25) circumference = 6π yd

$C = 2r\pi$

$\frac{6\pi}{2\pi} = \frac{2r\pi}{2\pi}$

$r = 3$

$A = \pi r^2$

$A = \pi(3)^2$

$\boxed{A = 9\pi}$

26) circumference = 22π in

$C = 2r\pi$

$\frac{22\pi}{2\pi} = \frac{2r\pi}{2\pi}$

$r = 11$

$A = \pi r^2$

$A = \pi(11)^2$

$\boxed{A = 121\pi}$

Critical thinking question:

27) Find the radius of a circle so that its area and circumference have the same value.

$A = C$

$\pi r^2 = 2\pi r$

$\frac{\pi r^2}{\pi r} = \frac{2\pi r}{\pi r}$

$\boxed{r = 2}$