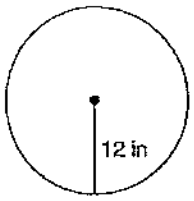
Name KEY

Circumference and Area of Circles

Date _____ Period ____

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

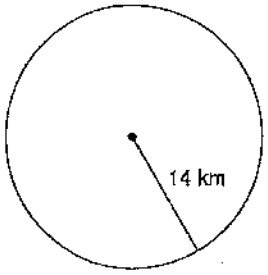
1) 

$A = \pi r^2$

$A = \pi (12^2)$

$A = \pi (144)$

$= 452.4 \text{ in}^2$

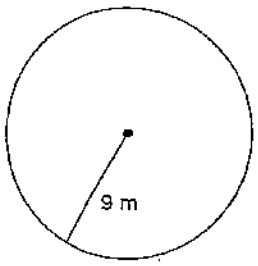
2) 

$C = \pi d$

$A = \pi (14^2)$

$A = \pi (196)$

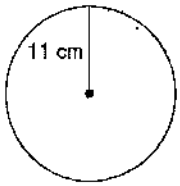
$= 615.8 \text{ km}^2$

3) 

$A = \pi (9^2)$

$\pi (81)$

$= 254.5 \text{ m}^2$

4) 

$A = \pi (11^2)$

$\pi (121)$

$= 380.1 \text{ cm}^2$

5) radius = 2.6 in

$A = \pi (2.6^2)$

$\pi (6.76)$

$= 21.2 \text{ m}^2$

6) radius = 34.1 in

$A = \pi (34.1^2)$

$\pi (1162.81)$

$= 3653.1 \text{ in}^2$

7) radius = 13.2 km

$A = \pi (13.2^2)$

$\pi (174.24)$

$= 547.4 \text{ km}^2$

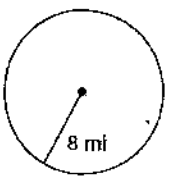
8) radius = 29.9 km

$A = \pi (29.9^2)$

$\pi (894.01)$

$= 2808.6 \text{ km}^2$

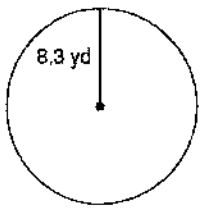
Find the circumference of each circle. Use your calculator's value of π. Round your answer to the nearest tenth.

9) 

$C = \pi d$

$C = \pi (16)$

$= 50.3 \text{ mi}$

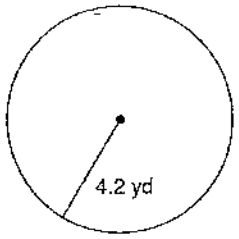
10) 

$C = \pi (16.6)$

$= 52.2 \text{ yd}$

KEY

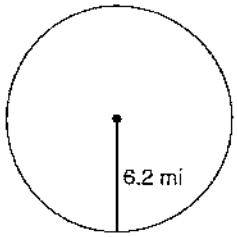
11)



$C = \pi(8.4)$

26.4 yd

12)



$C = \pi(12.4)$

$C = 39$ mi

13) radius = 5.2 ft $C = \pi(5.2)$

$= 16.3$ ft

14) radius = 11.1 ft $C = \pi(22.2)$

$= 69.7$ ft

15) radius = 9.5 in $C = \pi(19)$

$= 59.7$ in

Area

16) radius = 9.3 in $C = \pi(18.6)$

$= 58.4$ in

Find the ~~radius~~ of each circle. Use your calculator's value of π. Round your answer to the nearest tenth. $C = \pi d$, $d = \frac{C}{\pi}$ $r = \frac{1}{2}d$ $A = \pi r^2$

17) circumference = 62.8 mi

$d = \frac{62.8}{\pi} = 19.99$ $r = \frac{19.99}{2} = 9.99$

$A = \pi(9.99)^2$

$= 313.8 \text{ mi}^2$

18) circumference = 69.1 yd

$\frac{69.1}{\pi} = 21.99$ $\frac{21.99}{2}$

$A = \pi(10.99)^2$ $10.99 \approx 11$ 380 yd^2

19) circumference = 12.6 yd

$\frac{12.6}{\pi} = 4.01$ $r = \frac{4.01}{2} = 2.005$ $A = \pi(2.005)^2$

$= 12.6 \text{ yd}^2$

20) circumference = 25.1 ft

$\frac{25.1}{\pi} = 8$ $\frac{8}{2} = 4$ $A = \pi 4^2$

$A = 50.1 \text{ ft}^2$

Find the diameter of each circle. Use your calculator's value of π. Round your answer to the nearest tenth. $A = \pi r^2$ $r = \sqrt{\frac{A}{\pi}}$ $d = 2r$ $C = \pi d$

21) area = 201.1 in²

$r = \sqrt{\frac{201}{\pi}} = \sqrt{64.01} = 8.007$ $2(8) \approx 16$

$C = \pi 16 = 50.3$ in

22) area = 78.5 ft²

$r = \sqrt{\frac{78.5}{\pi}} \approx 5$ $d = 2(5)$ $C = \pi(10)$

$= 10$ $= 31.4$ ft

Find the circumference of each circle.

23) area = 64π mi²

$C = 16\pi = 50.3$ in.

24) area = 16π in²

$C = 8\pi = 25.1$ in.

Find the area of each.

25) circumference = 6π yd

$A = \pi(3)^2 = 28.3 \text{ yd}^2$

26) circumference = 22π in

$A = \pi(11)^2 = 380.1 \text{ in}^2$

Critical thinking question:

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

$A = C$

$\pi r^2 = \pi d$

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

$r^2 = d$.

The sq rt of any perfect sq.