math Antics Worksheets

Name: _____

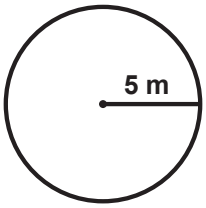
Date: _____

Estimating Circumference and Area

G-CCA 1

Instructions: A good way to quickly estimate the circumference and area of a circle is to round PI off to the whole number '3' (instead of using 3.14). Use PI = 3 to estimate the circumference and area of each of the circles below.

1

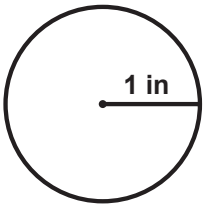


r = 5 m
so
d = 10 m

$C = \pi \times d$
$C = 3 \times 10$
$C = 30$ m

$A = \pi \times r^2$
$A = 3 \times (5 \times 5)$
$A = 75$ m^2

2

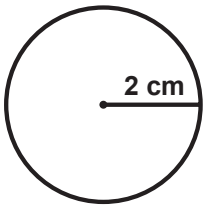


r = 1 in
so
d = 2 in

$C = \pi \times d$
$C = 3 \times 2$
$C = 6$ in

$A = \pi \times r^2$
$A = 3 \times (1 \times 1)$
$A = 3$ in^2

3

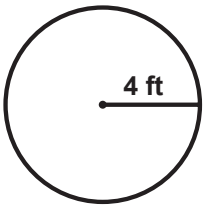


r = 2 cm
so
d = 4 cm

$C = \pi \times d$
$C = 3 \times 4$
$C = 12$ cm

$A = \pi \times r^2$
$A = 3 \times (2 \times 2)$
$A = 12$ cm^2

4

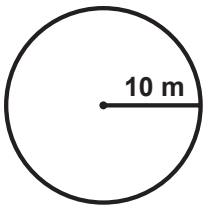


r = 4 ft
so
d = 8 ft

$C = \pi \times d$
$C = 3 \times 8$
$C = 24$ ft

$A = \pi \times r^2$
$A = 3 \times (4 \times 4)$
$A = 48$ ft^2

5

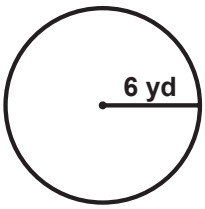


r = 10 m
so
d = 20 m

$C = \pi \times d$
$C = 3 \times 20$
$C = 60$ m

$A = \pi \times r^2$
$A = 3 \times (10 \times 10)$
$A = 300$ m^2

6



r = 6 yd
so
d = 12 yd

$C = \pi \times d$
$C = 3 \times 12$
$C = 36$ yd

$A = \pi \times r^2$
$A = 3 \times (6 \times 6)$
$A = 108$ yd^2

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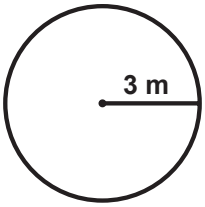
Calculating Circumference

G-CCA 2

Instructions: Use the formula you learned in the video to calculate the circumference of each circle below. Use PI = 3.14 and round your answers to two decimal places. You can use a calculator.
(Note: Sometimes the problem gives you the radius, but sometimes it gives you the diameter.)

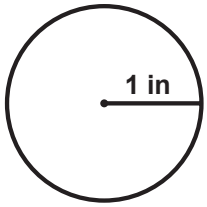
1



d = 3 x 2 = 6 m

C = π x d
C = 3.14 x 6 m
C = 18.84 m

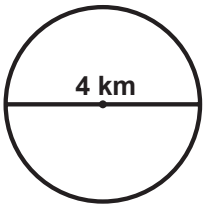
2



d = 1 x 2 = 2 in

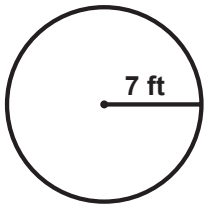
C = π x d
C = 3.14 x 2 in
C = 6.28 in

3



C = π x d
C = 3.14 x 4 km
C = 12.56 km

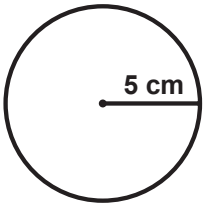
4



d = 7 x 2 = 14 ft

C = π x d
C = 3.14 x 14 ft
C = 43.96 ft

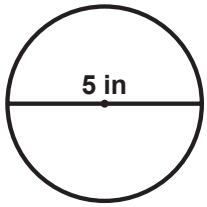
5



d = 5 x 2 = 10 cm

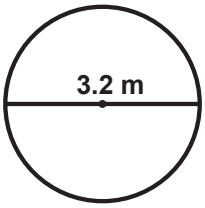
C = π x d
C = 3.14 x 10 cm
C = 31.4 cm

6



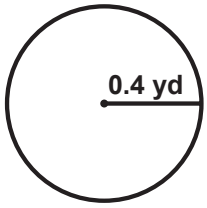
C = π x d
C = 3.14 x 5 in
C = 15.7 in

7



C = π x d
C = 3.14 x 3.2 m
C = 10.05 m

8



d = 0.4 x 2 = 0.8 yd

C = π x d
C = 3.14 x 0.8 yd
C = 2.51 yd

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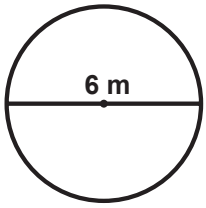
Calculating Area

G-CCA 3

Instructions: Use the formula you learned in the video to calculate the area of each circle below. Use PI = 3.14 and round your answers to two decimal places. You can use a calculator.
(Note: Sometimes the problem gives you the radius, but sometimes it gives you the diameter.)

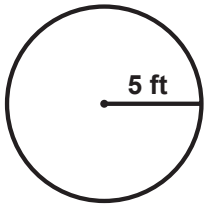
1



$A = \pi \times r^2$
$A = 3.14 \times (3 \times 3)$
$A = 28.26\ m^2$

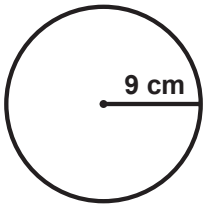
$r = \frac{6}{2} = 3\ m$

2



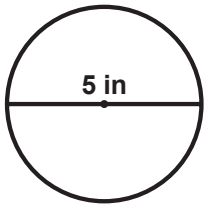
$A = \pi \times r^2$
$A = 3.14 \times (5 \times 5)$
$A = 78.5\ ft^2$

3



$A = \pi \times r^2$
$A = 3.14 \times (9 \times 9)$
$A = 254.34\ cm^2$

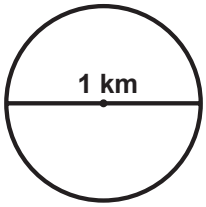
4



$A = \pi \times r^2$
$A = 3.14 \times (2.5)^2$
$A = 19.63\ in^2$

$r = \frac{5}{2} = 2.5\ in$

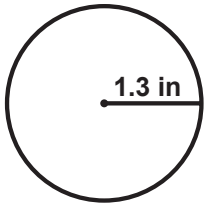
5



$A = \pi \times r^2$
$A = 3.14 \times (0.5)^2$
$A = 0.79\ km^2$

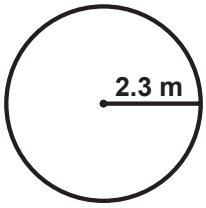
$r = \frac{1}{2} = 0.5\ km$

6



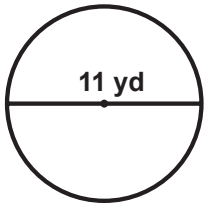
$A = \pi \times r^2$
$A = 3.14 \times (1.3)^2$
$A = 5.31\ in^2$

7



$A = \pi \times r^2$
$A = 3.14 \times (2.3)^2$
$A = 16.61\ m^2$

8



$A = \pi \times r^2$
$A = 3.14 \times (5.5)^2$
$A = 94.99\ yd^2$

$r = \frac{11}{2} = 5.5\ yd$

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Calculating Circumference and Area

G-CCA 4

Instructions: For the following problems, use PI = 3.14 You may use a calculator. If necessary, round your answers to two decimal places.

1 A circle has a radius of 1.5 meters. Find its circumference and area.

$d = 1.5 \times 2 = 3$ m

$C = \pi \times d$

$C = 3.14 \times 3 =$ 9.42 m

$A = \pi \times r^2$

$A = 3.14 \times (1.5 \times 1.5) =$ $7.07\ m^2$

2 A circle has a diameter of 26 feet. Find its circumference and area.

$r = 26 \div 2 = 13$ ft

$C = \pi \times d$

$C = 3.14 \times 26 =$ 81.64 ft

$A = \pi \times r^2$

$A = 3.14 \times (13 \times 13) =$ $530.66\ ft^2$

3 A circle has a diameter of 40 miles. Find its circumference and area.

$r = 40 \div 2 = 20$ mi

$C = \pi \times d$

$C = 3.14 \times 40 =$ 125.6 mi

$A = \pi \times r^2$

$A = 3.14 \times (20 \times 20) =$ $1{,}256\ mi^2$

4 A circle has a radius of 3.5 centimeters. Find its circumference and area.

$d = 3.5 \times 2 = 7$ cm

$C = \pi \times d$

$C = 3.14 \times 7 =$ 21.98 cm

$A = \pi \times r^2$

$A = 3.14 \times (3.5 \times 3.5) =$ $38.47\ cm^2$

5 A circle has a diameter of 16 inches. Find its circumference and area.

$r = 16 \div 2 = 8$ in

$C = \pi \times d$

$C = 3.14 \times 16 =$ 50.24 in

$A = \pi \times r^2$

$A = 3.14 \times (8 \times 8) =$ $200.96\ in^2$

6 A circle has a radius of 0.3 meters. Find its circumference and area.

$d = 0.3 \times 2 = 0.6$ m

$C = \pi \times d$

$C = 3.14 \times 0.6 =$ 1.88 m

$A = \pi \times r^2$

$A = 3.14 \times (0.3 \times 0.3) =$ $0.28\ m^2$

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Circumference and Area - Word Problems

G-CCA 5

Instructions: For the following problems, use PI = 3.14. You may use a calculator. If necessary, round your answers to two decimal places.

1 A bicycle tire has a radius of 14 inches. What is the circumference of the tire?

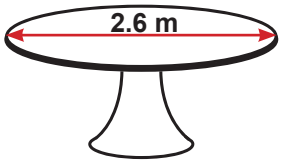
d =14 x 2 = 28 in

$C = \pi \times d$

$C = 3.14 \times 28$ in

$C = 87.92$ in

2 A round table top has a diameter of 2.6 meters. What is its surface area?



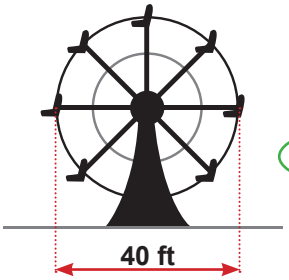
$r = \frac{2.6}{2} = 1.3$ m

$A = \pi \times r^2$

$A = 3.14 \times (1.3)^2$

$A = 5.31$ m^2

3 A Ferris-Wheel at an amusement park has a diameter of 40 feet. How far would you travel in one revolution? (In other words, find the circumference.)

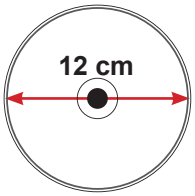


$C = \pi \times d$

$C = 3.14 \times 40$ ft

$C = 125.6$ ft

4 A DVD disc has a diameter of 12 centimeters. What is the surface area of one side of the disc?



$r = \frac{12}{2} = 6$ cm

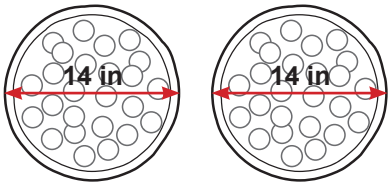
$A = \pi \times r^2$

$A = 3.14 \times (6 \times 6)$

$A = 113.04$ cm^2

5 Which has the greatest surface area: two pizzas that have 14 inch diameters or one pizza that has a 20 inch diameter?

$r = \frac{14}{2} = 7$ in

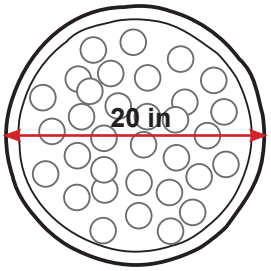


$A = \pi \times r^2$

$A = 3.14 \times (7 \times 7)$

$A = 153.86$ in^2

$2 \times A = 307.72$ in^2



$r = \frac{20}{2} = 10$ in

$A = \pi \times r^2$

$A = 3.14 \times (10 \times 10)$

$A = 314$ in^2

The 20 inch diameter pizza has a little more surface area than the two 14 inch diameter pizzas combined.