

Chapter 10

Geometry and Measurement

10.3 Circumference of a Circle

Pages- 525-530

NOTES (10.3) Circumference of a Circle

A **circle** is the set of all points in a plane that are the same distance from a **center** point.

The **radius** (r) is the distance from the center to any point on the circle.

The **diameter** (d) is the distance across a circle through its center.

Diameter = twice the radius

The **circumference** (C) is the distance around the circle.

MEMORIZE!!!

$$C = \pi d \quad C = 2 \pi r \quad \pi = 3.14 \text{ or } \frac{22}{7}$$

Guided Practice pp 527-528

For # 1-4 write the entire sentence

Do # 6 like this (2 pts)

7) <u>solve</u>	<u>estimate</u>	<u>estimate</u>
$C = 2\pi$	$C = 2 \bullet 3 \bullet 2$	$C = 3 \bullet 3$
$C = 2 \bullet 3.14 \bullet 1.5$	$C = 6 \bullet 2$	or $C = 9$
$C = 3 \bullet 3.14$	$C = 12$	
$C = 9 \bullet 42$		

$\begin{array}{r} 3.14 \\ \underline{3} \\ 9.42 \end{array}$	$C = 9m$
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#8 = 2pts

Do # 10 & 12 like this (2pts)

11) $C = \pi d$
 $C = 3.14 \bullet 12$
 $C = 37.68 \text{ yd}$

use 3.14 because
 12 is not compatible
 with $\frac{22}{7}$

$$\begin{array}{r} 3.14 \\ \underline{12} \\ 628 \\ \underline{3140} \\ 3768 \\ \hline \end{array}$$

$$13) C = 2 \cdot \pi \cdot r$$

$$C = 2 \cdot \frac{22}{7} \cdot 21$$

$$C = \frac{2 \cdot \cancel{22} \cdot \cancel{21}^3}{\cancel{7}}$$

$$C = 6 \cdot 22$$

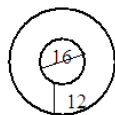
$$C = 132 \text{ km}$$

$$\begin{array}{r} 22 \\ \times 6 \\ \hline 132 \end{array}$$

I used $\frac{22}{7}$ because $\frac{22}{7}$ is compatible with 21.

Do # 18 & 20 like this (Break figures into "pieces" & add.)

19)



$$d = 16 \text{ so } r = 8$$

$$12 + 8 = 20$$

20 = radius of large circle

$$C = 2 \cdot \pi \cdot r$$

$$C = 2 \cdot 3.14 \cdot 20$$

$$C = 40 \cdot 3.14$$

$$C = 125.6 \text{ ft}$$

$$\begin{array}{r} 3.14 \\ \times 40 \\ \hline 125.60 \end{array}$$

21) Circumference = $\frac{1}{2}$ circle on top
 $\frac{1}{2}$ circle on bottom
 Distance between 2 half circles on both sides

$$C = \frac{1}{2} (2\pi r) + \frac{1}{2} (2\pi r) + 4 + 4$$

$$(2\pi r) + 8$$

$$2 \cdot 3.14 + 8$$

$$4 \cdot 3.14 + 8$$

$$12.56 + 8$$

$$20.56 \text{ meters}$$

$$3.14$$

$$\underline{4}$$

$$12.56$$

Do # 22 like this

$$23) C = \pi d$$

$$\frac{21.98}{3.14} = \frac{3.14 d}{3.14}$$

$$7 = d$$

$$3.14 \overline{) 21.98} \begin{array}{r} 7 \\ \underline{2198} \\ 0 \end{array}$$

$d = 7 \text{ km}$ $r = 3.5 \text{ km}$	Use 3.14 as it goes into 21.98 evenly
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28 = 2 pts
Do # 34 like this

$$35) (2.4)(3.1)^2$$
$$2.4(9.61)$$
$$\underline{23.064}$$

$$\begin{array}{r} 3.1 \\ \underline{3.1} \\ 31 \\ \underline{930} \\ 9.61 \end{array}$$

$$\begin{array}{r} 9.61 \\ \underline{2.4} \\ 3844 \\ \underline{19220} \\ 23064 \end{array}$$

Let's try # 24 for fun!!! 😊

$$P = 4 + 5 + 12 + 12 + \frac{1}{2} C$$

$$37.71 = 9 + 24 + \frac{1}{2} C$$

$$37.71 = 33 + \frac{1}{2} C$$

$$37.71 - 33 = \cancel{33-33} + \frac{1}{2} C$$

$$4.71 = \frac{1}{2} C$$

$$9.42 = C$$

$$C = \pi d$$

$$\frac{9.42}{3.14} = \frac{3.14 d}{3.14}$$

$$d = 3 \text{ ft}$$