Warm Up Grade 7

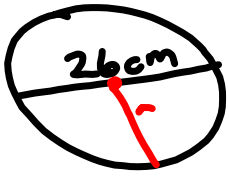
Date:_____

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

The diameter of a circle is 26 cm, what is the radius?

$d = 26\text{ cm}$

$r = ?$



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

$= \frac{26\text{cm}}{2}$

$= 13\text{ cm}$

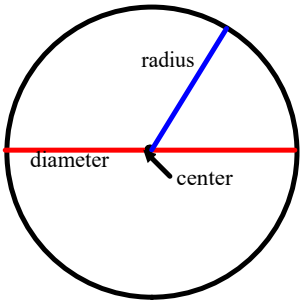
Circles

A circle is a shape where all points are the same distance(or equidistant) from the center.
From the math dictionary - A circle is a round flat two-dimensional shape where all points on the circumference are the same distance from the center.

The longest line through a circle, must pass through the center of the circle, this is the diameter of the circle.

The distance from the center of the circle to the outside of the circle is called the radius.

The circumference is the distance around (or perimeter) of the circle.



There is an infinite (unlimited number) of diameters and radii (plural for radius) that can be drawn.

What is the relationship between the radius and the diameter?

The diameter is 2 times the radius - $d = 2r$

or

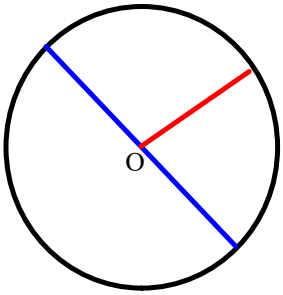
The radius is half the diameter - $r = \frac{d}{2}$

a) Find the radius if the diameter is 18 cm

b) Find the diameter if the radius is 12 cm

Remember

Circles and Circumference



A circle is a flat, 2 dimensional shape, where all point are the same distance from the center of the circle. The center of the circle is normally indicated with the letter O.

Any line from the center of the circle to the circle is called the radius.

A line that touches the circle at two points, and passes through the center of the circle is called the diameter.

Do not recopy these notes

What is the relationship between the radius and the diameter?

The radius is half the diameter, or
The diameter is twice the radius.

If you are given the diameter can you find the radius? HOW?

If you are given the radius can you find the diameter? HOW?

Circles and Circumference

The perimeter of the circle is called the circumference.
How do you find the circumference?
There is a formula that you use to find the circumference,
Circumference equals the diameter times a constant, pi ,
always equals 3.14
We use 3.14 for π , but actually it is an irrational number, 3.141 592 653 589.
An irrational number is a number that never repeats and never terminates, it can not b written as a fraction.

π **π**

3.14 x ___

Circumference = π x d

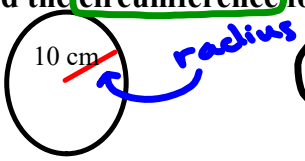
or since d = 2 x radius

= 2 π r (which is 2 x π x r)

2 x 3.14 x ___

Examples:
Find the circumference for each of the following:

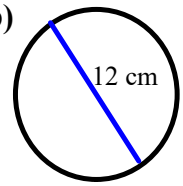
(a)



r = 10cm

C = 2 π r
C = 2 (3.14) (10cm)
C = 62.8 cm

(b)



d = 12 cm

C = π d
C = (3.14) (12cm)
C = 37.6 cm

(c) Circle with a radius of 4

r = 4

C = 2 π r
C = 2 (3.14) (4)
C = 25.1 units

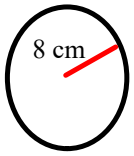
How would you estimate the circumference of a circle?

Multiply the diameter by 3 instead of 3.14

round π to 3

Examples:
ESTIMATE the circumference for each of the following:

(a)

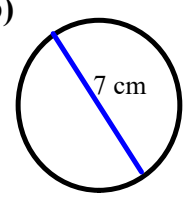


r = 8

Estimate

$C = 2\pi r$
$\approx 2(3)(8\text{cm})$
$\approx 48\text{cm}$

(b)



Estimate

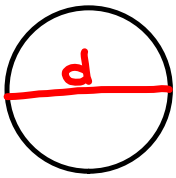
How would you find the circumference of a circle? Use $\pi = 3.14$

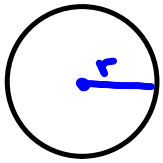
Example) Find the circumference if the radius is 15 cm.

Class / Homework

Page 136-137

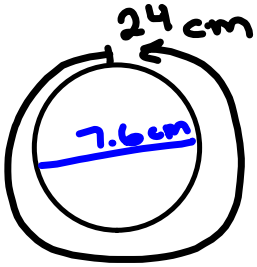
HW: # 1, #2, #4, #5, #6, extra: # 8





$d = \frac{C}{\pi}$

to get radius cut $\frac{d}{2} = r$



$C = 24cm$

$d = \frac{C}{\pi}$

$= \frac{24\,cm}{3.14}$

$d = 7.6cm$

$r = \frac{d}{2}$ $\frac{7.6cm}{2} = 3.8cm$

2. $Cir = 24cm$, $d = ?$

$Cir = \pi \times d$

$24 = 3.14 \times d$

$\frac{24}{3.14} = d$