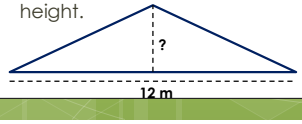
Warmup

Created by Mr. Lischwe

3/(#*of letters in "circumference"*)

Get a calculator!!!

1) Write down the formula for circumference of a circle without looking at your notes.
2) Write down the formula for area of a circle without looking at your notes.
3) Evaluate the expression $4a^2$ when **a = 3**.
4) If the area of the triangle is 36 m^2, find the height.



NO POWER UP THURSDAY OR FRIDAY

- **Thursday – Math Benchmark**
- **Friday – ELA Field Test**

ALEKS Progress Grade

- **+7% and up = 100**
- **+6% = 93**
- **+5% = 85**
- **+4% = 75**
- **+3% = 70**
- **+2% = 60**
- **+1% = 50**
- **+0% = 0**

Progress: Biggest Gainers

+9%: Lucia H, Sanaa W, Kyndal S

+10%: Loki O

+11%: Kimberly O, Alex S

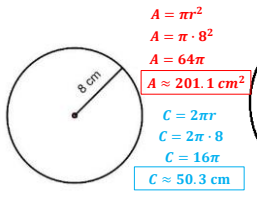
+13%: Lazarius G, Lily C

+14%: Emma L

- **About 5ish topics = 1%**
- **Be aware = the knowledge checks could have knocked you up or down based on how you did**

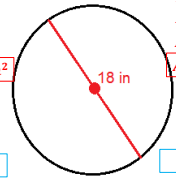
Examples

- **Find the area and circumference. Round to the nearest tenth:**



$A = \pi r^2$
$A = \pi \cdot 8^2$
$A = 64\pi$
$A \approx 201.1\ cm^2$

$C = 2\pi r$
$C = 2\pi \cdot 8$
$C = 16\pi$
$C \approx 50.3$ cm



$A = \pi r^2$
$A = \pi \cdot 9^2$
$A = 81\pi$
$A \approx 254.5\ in^2$

$C = \pi d$
$C = \pi \cdot 18$
$C = 18\pi$
$C \approx 56.5$ in

ADVICE: Use the pi button, not 3.14. To ensure accurate answers, you should not round until the very end!!!

Examples

- **If the circumference of a circle is 10 inches, find the radius.**

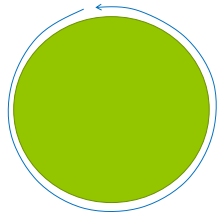
$C = 2\pi r$
$10 = 2\pi r$
$\frac{10}{(2\pi)} = r$
$1.6 \approx r$

- **If the area of a circle is 30 in^2, find the diameter.**

$A = \pi r^2$
$30 = \pi r^2$
$9.549 \approx r^2$
$3.1 \approx r$
$6.2 \approx d$

Find the area:

C = 25 cm

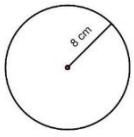


$C = 2\pi r$
$25 = 2\pi r$
$\frac{25}{(2\pi)} = r$
$3.97887 \approx r$

$A = \pi r^2$
$A = \pi \cdot (3.97887)^2$
$A \approx 49.7\ cm^2$

Exact answers…

- Math people often dislike rounded answers because they are not exact.
- **How might we write these answers <u>exactly</u>?**
- **To write an exact answer, just leave the "pi" in the expression.**



$$A = \pi r^2$$
$$A = \pi \cdot 8^2$$
$$\boxed{A = 64\pi}$$

ROUNDING:

- To make sure your answer is as exact as possible, you should try not to round until the end of the problem.
- You should either write down as many of the decimals as you can, or better yet, leave the super-long decimal in your calculator for the next step.
- (You can also just leave it as the exact expression, like $({}^{25}/_{2\pi})$, but that can get messy.)

- If the **area** of a circle is 16π square feet, what is the exact circumference in feet?

- **PLAN: Area → Radius, then Radius → Circumference**

$$A = \pi r^2$$
$$16\pi = \pi r^2$$
$$16 = r^2$$
$$4 = r$$
$$C = 2\pi r$$
$$C = 2\pi \cdot 4$$
$$\boxed{C = 8\pi \ ft}$$

Homework

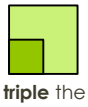
- Area, perimeter, circumference worksheet

Problem Solving

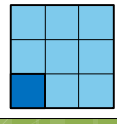
- At Pedro's pizza, an 8-inch pizza (the size of the pizza is the diameter) costs $6 and a 16-inch pizza costs $15. Which is the better deal?

A similar phenomenon…

- If you **double** the side lengths of a square, does the area double?



- If you **triple** the side lengths of a square, does the area triple?



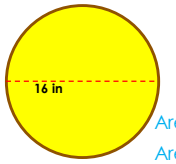
Here's what the pizzas look like...

$6

Area = $\pi \cdot 4 \cdot 4$

Area = 16π

$15

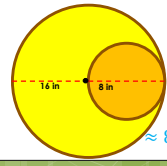


Area = $\pi \cdot 8 \cdot 8$

Area = 64π

Problem Solving

- At Pedro's pizza, an 8-inch pizza (the size of the pizza is the diameter) costs $6 and a 16-inch pizza costs $15. Which is the better deal?



8-inch

Radius = 4

$A = 16\pi$

$A \approx 50.3\ in^2$

$50.3 \div \$6$

$\approx 8.38\ in^2$ per dollar

16-inch

Radius = 8

$A = 64\pi$

$A \approx 201.1 in^2$

$201.1 \div \$15$

$\approx 13.4\ in^2$ per dollar

HOMEWORK

- **DUE IN TWO DAYS! (Thursday)**
- **BOTH Area, Perimeter, Circumference Worksheets – Yellow AND Purple!!!**