Created by Mr. Lischwe

## Warmup 3/(\# of quadrants on a coordinate plane)

Week 9!!! Get a calculator!!!

1. What is the length of a 42-inch TV that is 24 inches tall? Draw a picture to help.

2. Find $x$.


mathwarehouse.com/gifs

## Turn in "Measuring your TV" Sheets

Who got theirs to be exact?

## ALEKS Announcement

- The next 30 minutes of ALEKS will be due the Monday we get back from Spring Break. (Technically Sunday night at midnight)
- I will tell you your progress grades tomorrow. If you do not like your grade, you may do ALEKS between now and Friday to try to raise it.


## Go over Transformations Tests

- May retake Part 1 or Part 2 or both
- Retake deadline is THURSDAY (there won't be enough time on Friday)


## Common Pythagorean Triples

-3, 4, 5
-5, 12, 13
-8, 15, 17
-7, 24, 25
-9, 40, 41

- MEMORIZE THESE!!! (It will pay off!)


## If $3,4,5$ works...

- What can you do with the numbers to create a similar triangle? (Different size but same angles)

-3, $4,5 \longrightarrow 6,8,10$
$\cdot 3,4,5 \longrightarrow 9,12,15$
$\cdot 3,4,5 \longrightarrow 18,24,30$
$\cdot 3,4,5 \longrightarrow \mathrm{x} 100 \longrightarrow 300,400,500$


## Common Pythagorean Triples

-3, 4, 5
-5, 12, 13
-8, 15, 17
-7, 24, 25
-9, 40, 41
-+ Any multiple of these!!!
-For example: $(6,8,10)$ or $(50,120,130)$

## Find the length of the side!



## Find the length of the side!



## Find the length of the side!



## Find the length of the side!

$$
x=24 \mathrm{f}
$$



## Find the length of the side!

$$
x=5 \mathrm{~mm}
$$



## Find the length of the side!

$$
(3,4,5) \xrightarrow{x^{2}}(6,8,10)
$$

$$
x=10 \mathrm{~cm}
$$

## Find the length of the side!

$$
(8,5,17) \xrightarrow{\times 10}(80,50,170)
$$



## Find the length of the side!

$$
(9,40,41) \rightarrow(18,80,82)
$$



## Find the length of the side!



$$
x=1300 \text { in }
$$

## Find the length of the side!



## Find the length of the side!



## Find the length of the side!



## Find the length of the side!



## How do I show work?

- If you have some of these Pythagorean Triples memorized, you can use this knowledge in place of working out the math. However you MUST say "Pythagorean Triple" or "Pyth. Triple" or something like that so that I know your thought process.


## So you could write...



## QUESTION....

- How many miles is it DIRECTLY from Nashville to Memphis? (As the crow flies)



## Table of Contents (2 ${ }^{\text {nd }}$ Semester)

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p. 13 Distance on the Coordinate Plane (handout)

## Distance on the Coordinate Plane

## Objectives:

- Find the distance between any two points on the coordinate plane:
- Horizontally
- Vertically
- Diagonally

How far are these points from each other???


6 units

How far are these points from each other???


How far are these points from each other???

$$
\begin{gathered}
\text { diamond } \\
=\text { count } \\
\text { count }
\end{gathered}
$$



## Activity: Estimating Distances

For each one:

- Draw the two points
- ESTIMATE the distance, in cm, between the points.
- Measure the actual distance to the nearest tenth of a centimeter.

1. $(1,23)$ and $(5,21)$
2. $(9,17)$ and $(17,23)$
3. $(1,15)$ and $(2,10)$
4. $(11,11)$ and $(15,15)$
5. $(2,7)$ and $(18,0)$

How can we get the EXACT distance???


- Finding the Distance between Points in the Coordinate Plane
- Draw a right triangle
- Count the side lengths
- Use the Pythagorean Theorem!


## Find the distance between the points.



## Find the distance between the points.



## Example 3

-What is the distance between $(-3,2)$ and $(4,6)$ ? Draw a picture to help!!!

## Example 4

- Can you figure out what the distance would be between $(25,10)$ and $(45,16)$ ?


Example 5

- Find the perimeter of the triangle.

$$
\begin{aligned}
& \text { purple }=13 \\
& \text { green: } \begin{array}{r}
4^{2}+12^{2}=x^{2} \\
16+144=x^{2} \\
160-x^{2} \\
x \approx 12.6
\end{array}
\end{aligned}
$$



$$
\begin{gathered}
\text { blue: } \begin{array}{c}
9^{2}+12^{2}=y^{2} \\
81+144=y^{2} \\
225=y^{2} \\
15=y
\end{array} \\
\text { Perimeter } \approx 13+12.6+15 \\
P \approx 40.6
\end{gathered}
$$

## Homework

- p. 435 (1-4, 9)
- YOU MUST SHOW ALL YOUR WORK!!!

