## Warmup 3/ (Pythagorean <br> Triple <br> $\qquad$ $15,17)$

1. TV A and TV B are both 42 -inch TV's. (Remember, TV's are measured by their diagonals.) TV A has a length of 32 inches. TV B has a length of 36 inches. Which TV has a greater area?
Draw pictures and show all of your work.
2. Which TV has a greater perimeter?
3) Find the area and perimeter of the triangle:


## A

A white square with side length $x$ is inscribed in a black circle as shown.
$\sum_{8 \mathrm{~A}}^{8}$

The circle has a radius of 8 feet. Enter an approximate side length for $x$, in feet, to the nearest tenth of a foot.
$\approx 11.3 \mathrm{ft}$


## D

## Pythagorean Theorem in 3D

A cube is shown.

This is also a right triangle
This is a right triangle

$$
\begin{aligned}
& \sqrt{98}^{2}+7^{2}=x^{2} \\
& \text { or } x \approx 12.12 \text { in }
\end{aligned}
$$

$7^{2}+7^{2}=x^{2}$
$x=\sqrt{98}$ or $x \approx 9.9$

Enter the length, to the nearest hundredth of an inch, of the diagonal.

## E

To the nearest tenth of a unit, what is the perimeter of a triangle with vertices at $(3,4),(2,2)$, and ( 0,5 )?

A 5.3 units

- 7.3 units
c 8.7 units
- 9.0 units

You should draw a picture to help you!!! (You may draw it or use a graphing sheet)

## F More ladders!

A 20-foot ladder is leaning against a 24 foot tall building. How far away from the building must the ladder be so that it reaches a window that is 6 feet below the top of the Find the distance between: building? (Draw a picture!)


$$
\begin{gathered}
x^{2}+18^{2}=20^{2} \\
x \approx 8.7 \mathrm{ft}
\end{gathered}
$$

- Points $(\mathbf{1 0 1}, 450)$ and $(\mathbf{2 0 0},-50)$

$$
\mathbf{9 9}^{2}+500^{2}=x^{2}
$$

$\approx 509.7$ units

## H Bob's Drive

Bob drives 10 miles east, then 3 miles south, then 4 miles west. How far away from his starting point does he end up? (Draw a picture!)


$$
\begin{gathered}
6^{2}+3^{2}=x^{2} \\
x \approx 6.7 \mathrm{mi}
\end{gathered}
$$

If the distance between the points is exactly 10 units, then what is the value of () ?

$$
\xrightarrow{(-3,9)} \begin{gathered}
6^{2}+x^{2}=10^{2} \\
x=8
\end{gathered}
$$



## RATE YOURSELF. HOW GOOD ARE YOU AT:

- Using the Pythagorean theorem to find the $3^{\text {rd }}$ side of a right triangle
- The EXTRA PRACTICE worksheet has 21 problems, but they are easier.
- Choose this one if you might be a little shaky on some of the concepts and you want to make sure you get the basics down.
- Finding the distance between two points by drawing the triangle or by using the distance formula
- The EXTENSION worksheet only has 7 problems, but they are harder.
- Choose this one if you don't think you need any more practice on the basics.
- When you are done, you MUST log on to my website and use the answer keys to check your work in a different color. This will be part of your effort grade.

