

Warm Up

1/30/19

1. Use the following to fill in the blanks:

B is the midpoint of AC

$AB = 7x + 19$ and $BC = 10x - 14$

$x = \underline{11}$ $AB = \underline{96}$ $BC = \underline{96}$ $AC = \underline{192}$

$7x + 19 = 10x - 14$

$-10x$	$-10x$	
<hr/>		
$-3x + 19 = -14$		
-19	-19	
<hr/>		
$-3x = -33$		
-3	-3	
<hr/>		
$x = 11$		

AB $7x + 19$
 $7(11) + 19$
 96

BC $10x - 14$
 $10(11) - 14$
 96

2. Use the following to fill in the blanks:

Y is the midpoint of XZ

$XY = 4x - 5$ and $YZ = 3x + 1$

$x = \underline{6}$ $XY = \underline{19}$ $YZ = \underline{19}$ $XZ = \underline{38}$

XY	$4x - 5$	YZ	$3x + 1$
	$4(6) - 5$		$3(6) + 1$
	19		19
		XZ	$19 + 19$

TRIANGLES:

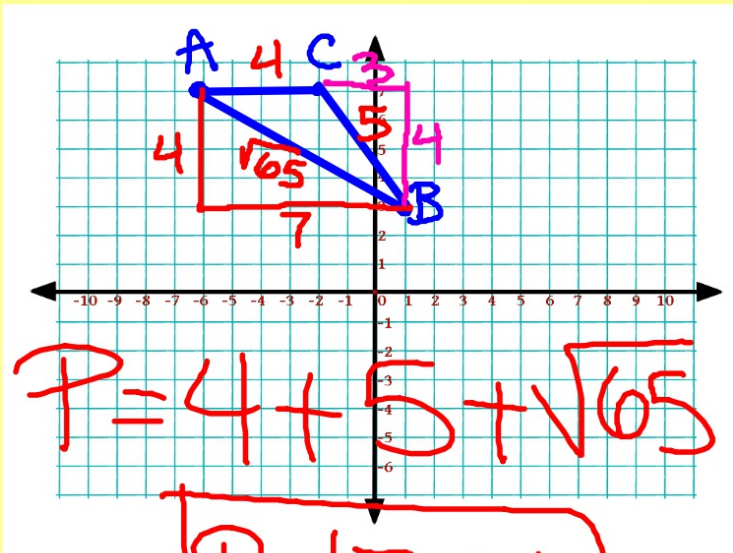
CHARACTERISTICS

CLASSIFYING



Perimeter:

Given a triangle with vertices A (-6,7) B(1,3) and C(-2, 7)
What is the approximate perimeter? Round to the nearest hundredth.



$$P = 4 + 5 + \sqrt{65}$$

$$P = 17.06$$

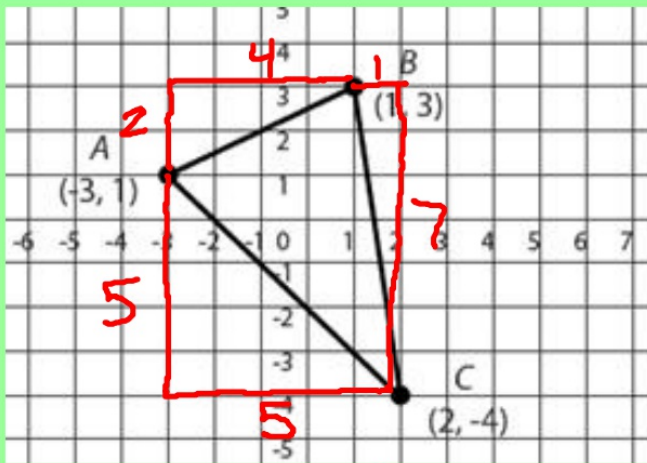
How do you calculate the perimeter of ANY shape?

$$\begin{aligned} AB \quad 4^2 + 7^2 &= c^2 \\ 16 + 49 &= c^2 \\ c^2 &= 65 \end{aligned}$$

$$\begin{aligned} BC \quad c &= \sqrt{65} \\ 3^2 + 4^2 &= c^2 \\ 9 + 16 &= c^2 \\ c^2 &= 25 \\ c &= 5 \end{aligned}$$

Perimeter:

Given a triangle with vertices A (-3,1) B (1,3) and C (2, -4). Calculate the perimeter of the triangle. Round to the nearest hundredth.



$$\begin{aligned} AB \quad 2^2 + 4^2 &= c^2 \\ 4 + 16 &= c^2 \\ c^2 &= 20 \\ c &= \sqrt{20} \end{aligned}$$

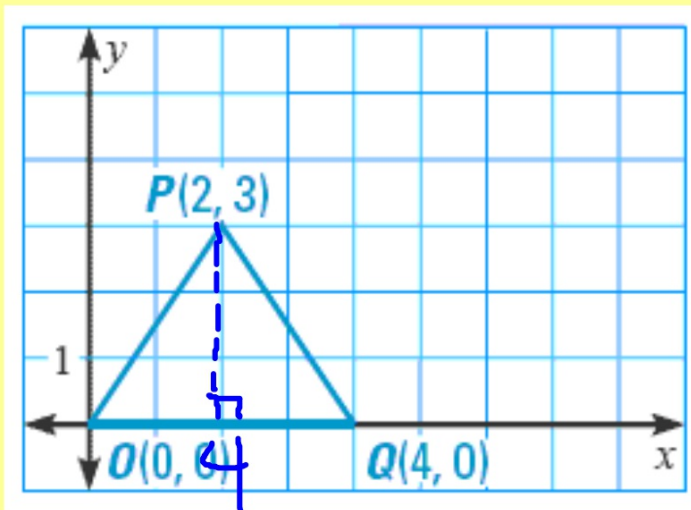
$$\begin{aligned} BC \quad 1^2 + 7^2 &= c^2 \\ 1 + 49 &= c^2 \\ c^2 &= 50 \\ c &= \sqrt{50} \end{aligned}$$

$$\begin{aligned} AC \quad 5^2 + 5^2 &= c^2 \\ 25 + 25 &= c^2 \\ c^2 &= 50 \\ c &= \sqrt{50} \end{aligned}$$

$$P = 18.61$$

Area:

Determine the area of triangle OPQ.



How do you calculate the area of a triangle?

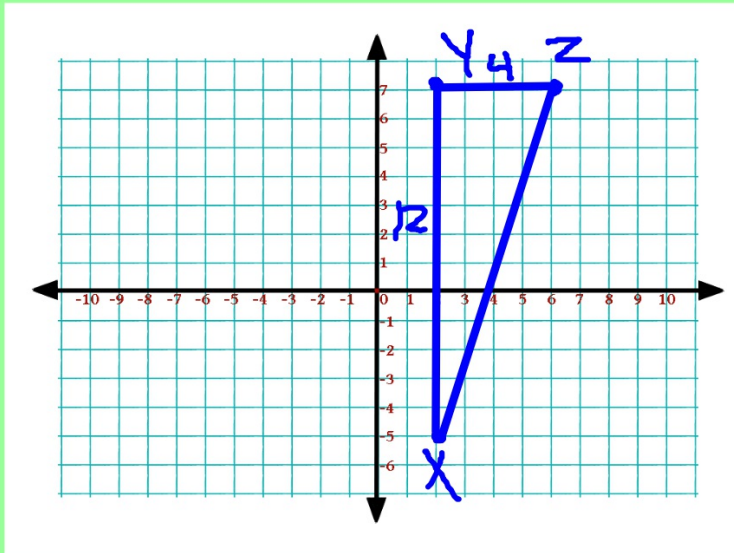
$$A = \frac{bh}{2}$$

$$A = \frac{4(3)}{2}$$

$$A = 6 \text{ u}^2$$

Area:

Given a triangle with vertices X(2, -5) Y(2, 7) and Z (6, 7).
Calculate the area of the triangle.



$$A = \frac{bh}{2}$$
$$A = \frac{4(12)}{2}$$
$$A = 24 \text{ u}^2$$

Classifying Triangles:

Triangles can be classified by their side lengths.

Match each triangle to the appropriate description.

Equilateral

The lengths of
at least two sides
are the same.

Isosceles

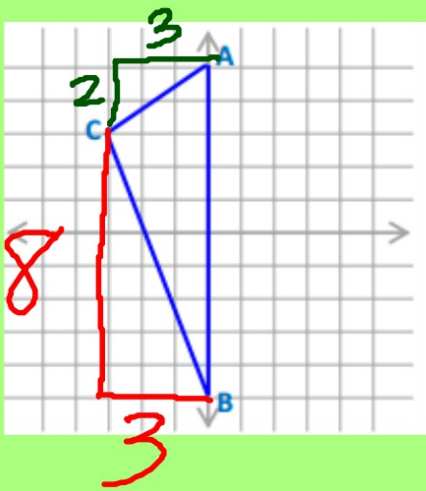
All 3 sides have
different lengths.

Scalene

All three side
lengths are the same.

Remember: LENGTH = DISTANCE

Use the side lengths to prove that triangle ABC is **scalene**.



$$\text{length } AB = 10$$

$$\text{length } BC =$$

$$3^2 + 8^2 = c^2$$

$$9 + 64 = c^2$$

$$c^2 = 73$$

$$c = \sqrt{73}$$

$$\text{length } CA =$$

$$2^2 + 3^2 = c^2$$

$$4 + 9 = c^2$$

$$c^2 = 13$$

$$c = \sqrt{13}$$

Given triangle ABC, classify it as equilateral, isosceles, or scalene.

AB $\boxed{5}$

BC $1^2 + 3^2 = c^2$
 $1 + 9 = c^2$
 $c^2 = 10$
 $c = \boxed{\sqrt{10}}$

CA $3^2 + 4^2 = c^2$
 $9 + 16 = c^2$
 $c^2 = 25$
 $c = \boxed{5}$

