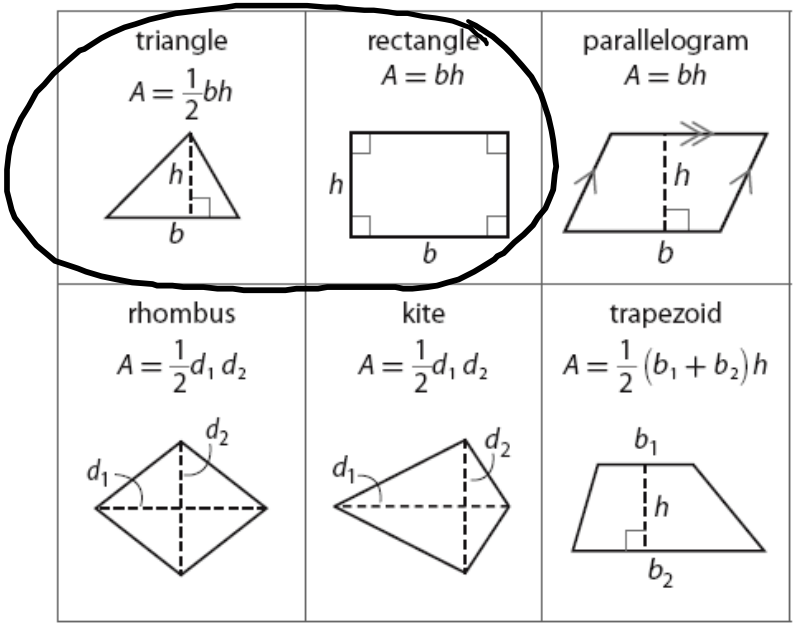
Perimeter and Area

Perimeter - The length around a shape (add up all of the sides)

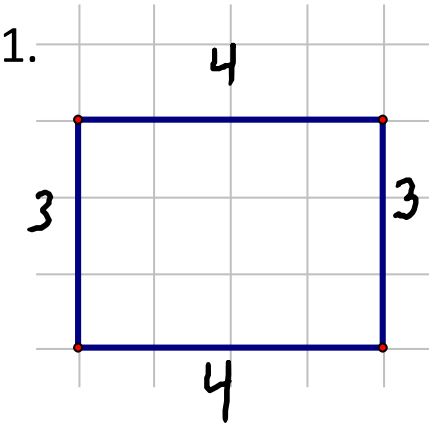
Area – The amount of square units inside a shape.



- Base and height must be perpendicular
- Use Pythagorean Theorem to find missing sides of a right triangle → $a^2 + b^2 = c^2$

Find the perimeter and area:

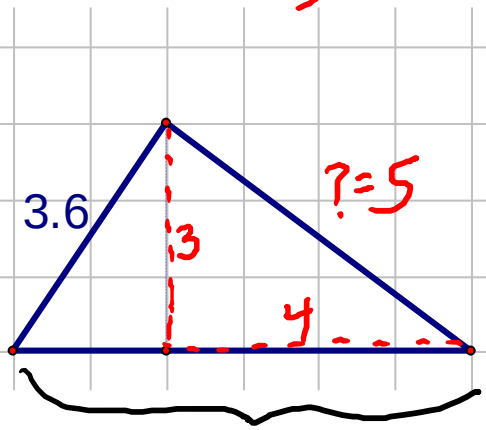
1.



$P = 4+3+4+3 = 14$

$A = 3 \cdot 4 = 12$

2.



$P = 3.6+5+6$

$= 14.6$

$A = \frac{1}{2}(6)(3) = 9$

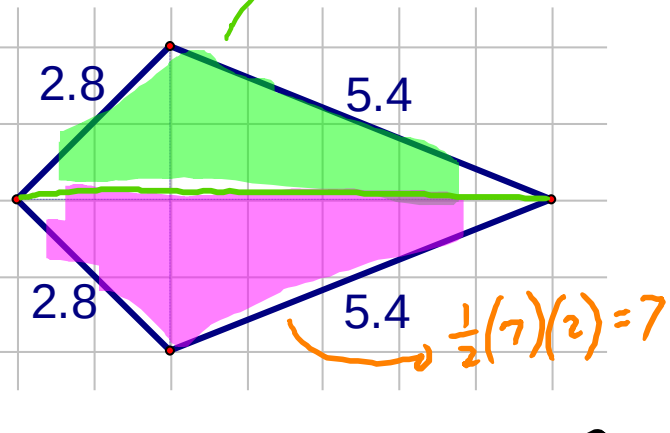
$3^2+4^2=x^2$

$9+16=x^2$

$\sqrt{25}=\sqrt{x^2}$

$x = 5$

3.



$\frac{1}{2}(7)(2) = 7$

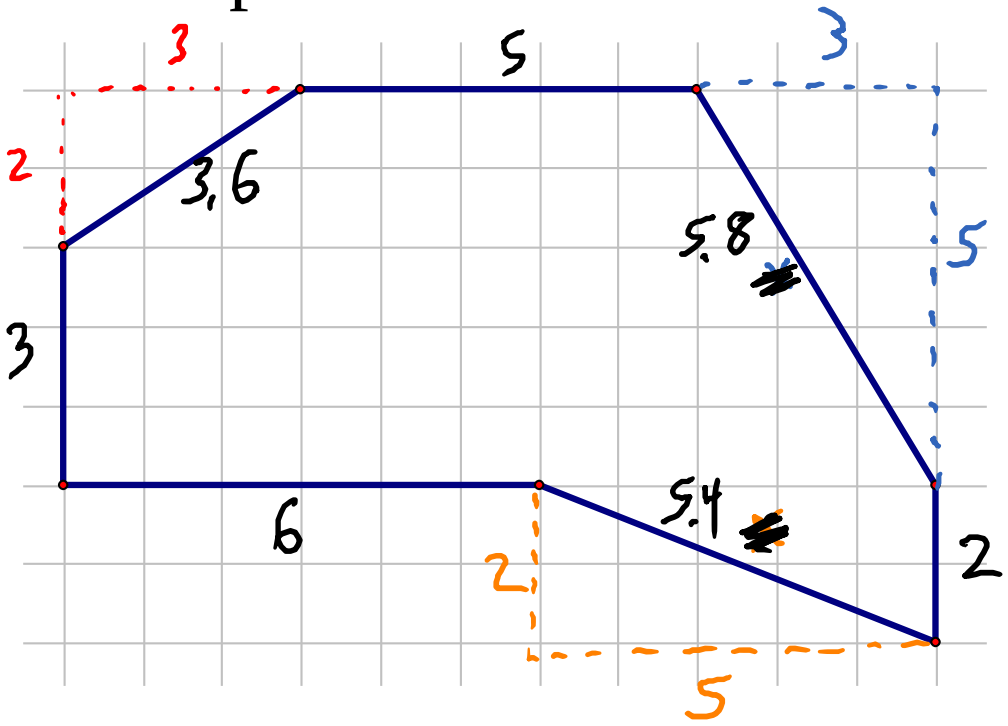
$\frac{1}{2}(7)(2) = 7$

$P = 2.8+5.4+5.4+2.8$

$= 16.4$

$A = 7+7 = 14$

Find the perimeter:



$2^2+3^2=x^2$

$4+9=x^2$

$\sqrt{13}=\sqrt{x^2}$

$x=3.6$

$3^2+5^2=x^2$

$9+25=x^2$

$\sqrt{34}=\sqrt{x^2}$

$x=5.8$

$2^2+5^2=x^2$

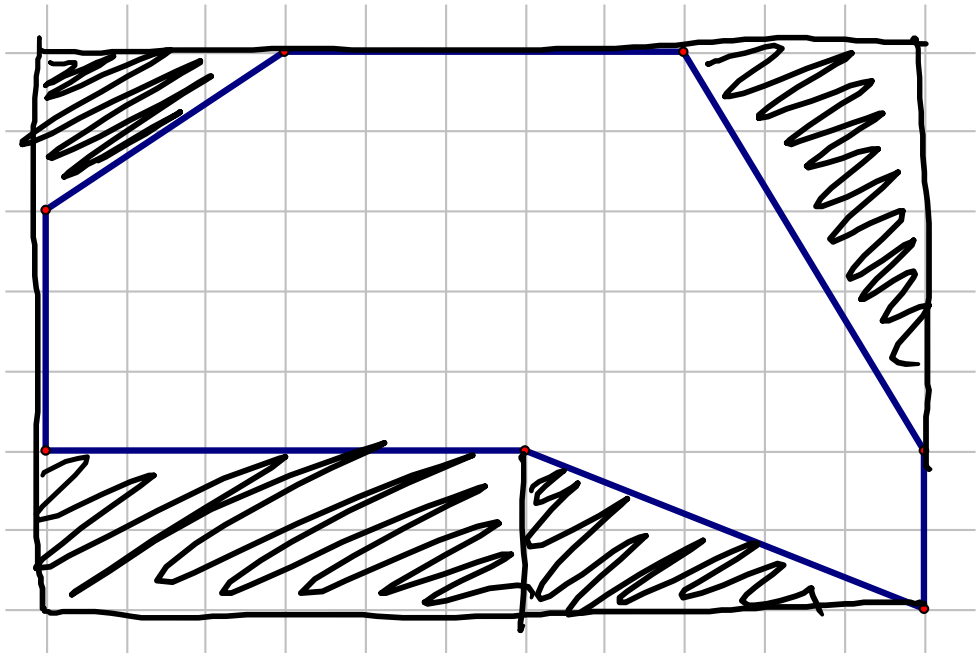
$4+25=x^2$

$\sqrt{29}=\sqrt{x^2}$

$x=5.4$

$P=3+3.6+5+5.8+2+5.4+6$

$=30.8$



What about the area?

Come up with a strategy to either find or estimate the area of this figure.

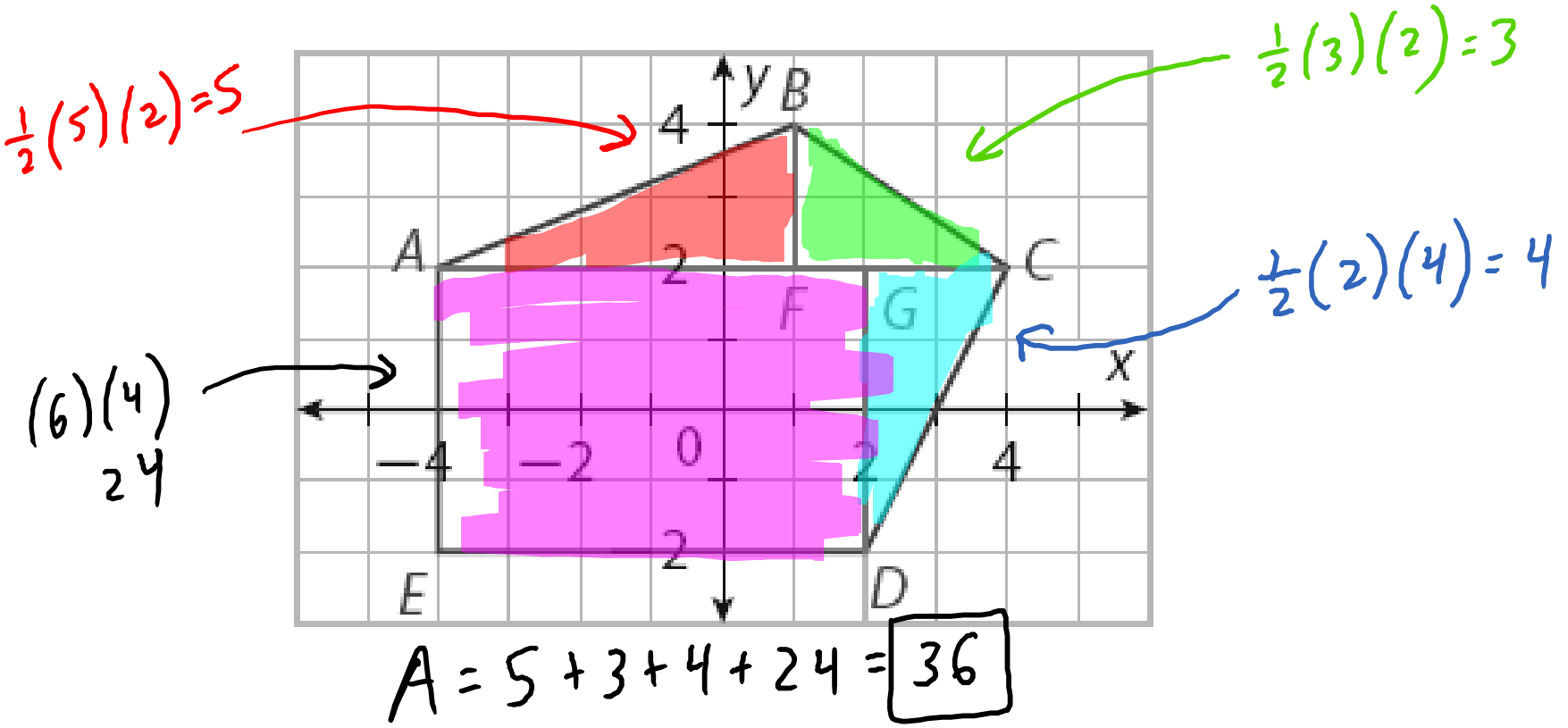
Areas of Composite Figures

- Break into simple shapes that you can easily find the area of. **ADD** the area of all shapes together
- Use horizontal and vertical lines if possible. **The base & height must be perpendicular!**

OR

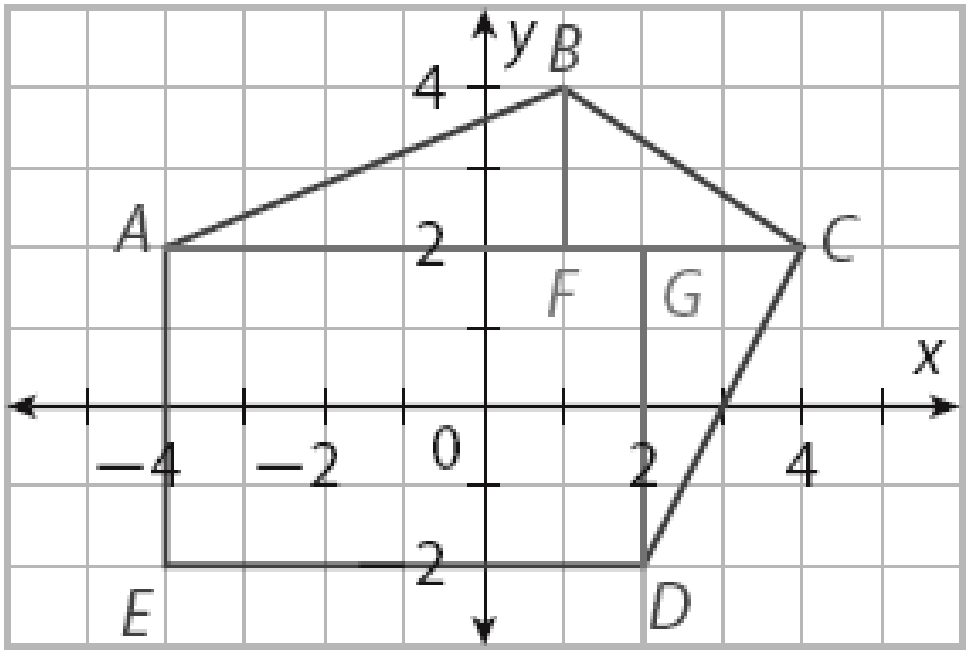
- Draw a rectangle around the shape. **SUBTRACT** the area of the extra triangles and you are left with the desired area.

Find the area of the shape using addition:

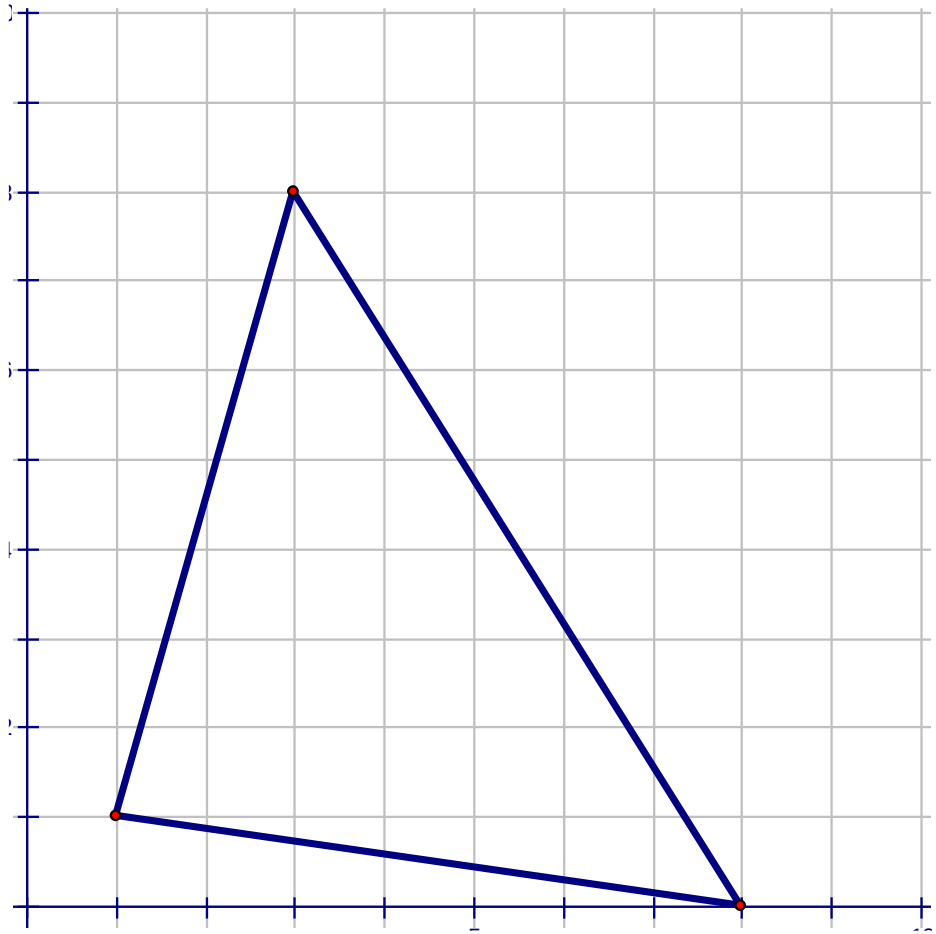


$A = 5 + 3 + 4 + 24 = \boxed{36}$

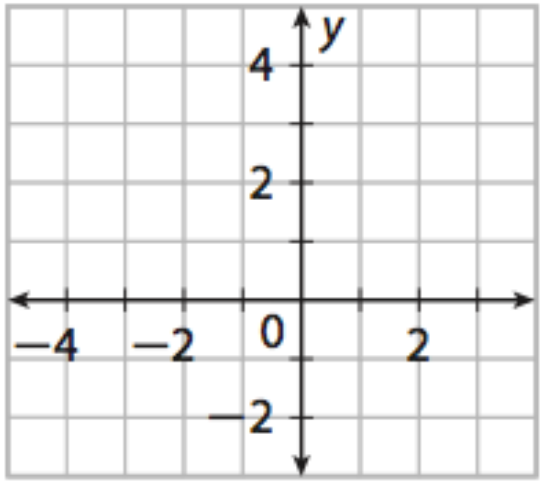
Find the area of the shape using subtraction:



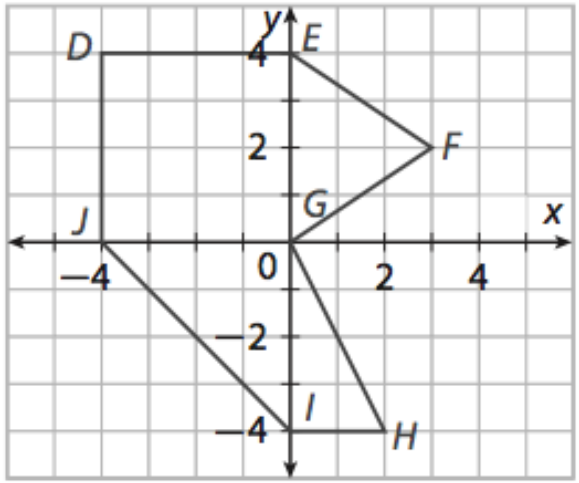
Find the area:

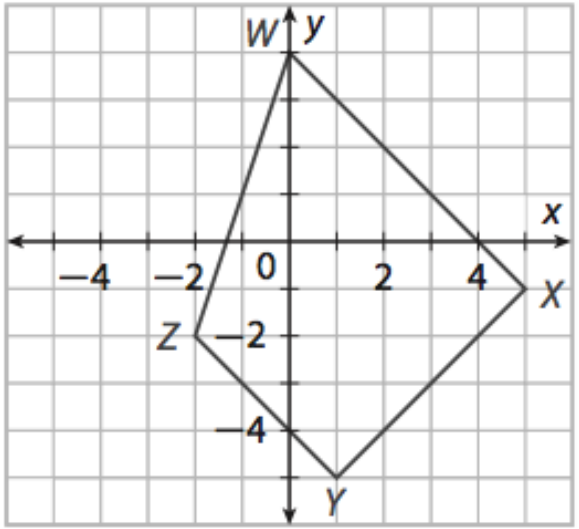


Find the area for quadrilateral $JKLM$ with vertices $J(-4,-2)$, $K(2,1)$, $L(3,4)$, and $M(-3,1)$.



Find the area:





City Map Project Final Draft is due next Wednesday

You will turn in:

- Score Sheet/Legend (Page 3 of assignment sheet)
  - This is what you turned in with your rough draft
  - Nothing needs to be added or changed
- Your Map
  - 8 ½ by 11 or larger
  - Can by drawn on map template, let me know if you need another copy
  - CANNOT be drawn over your rough draft
  - Doesn't need a grid or numbers, but everything must be NAMED
  - Must have a title → The name of your city
  - Must be neat → Use a ruler, stencils, stickers, etc.
  - Must be colorful → Use markers or colored pencils
  - Must be creative → The items in your map should look like what they are