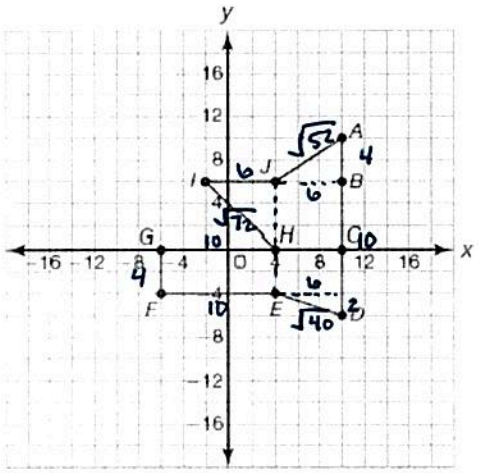
Chapter 3 Review **Name:** Key **Period:**_____

1. Analyze the figure shown.



a. Determine the perimeter of the composite figure. Round to the nearest tenth.

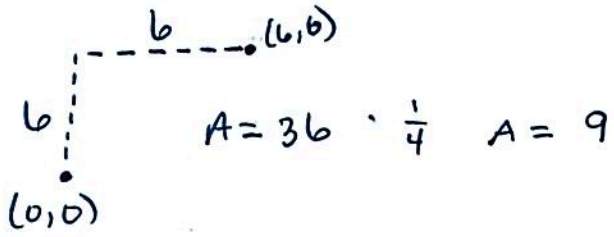
68.02 units

b. Determine the area of the composite figure. Round to the nearest tenth.

136 units^2

2. A square on the coordinate plane has opposite vertices at (0, 0) and (6, 6). What would the area of the square be if each side length were decreased by a factor of $\frac{1}{2}$? → $\frac{1}{4}$

a. 6 square units
b. 9 square units
c. 12 square units
d. 18 square units



$A = 36 \cdot \frac{1}{4}$ $A = 9$

Chapter 3 Review **Name:**_____ **Period:**_____

3. Analyze triangle *XYZ*.

$\overline{YX}$ $\overline{XZ}$

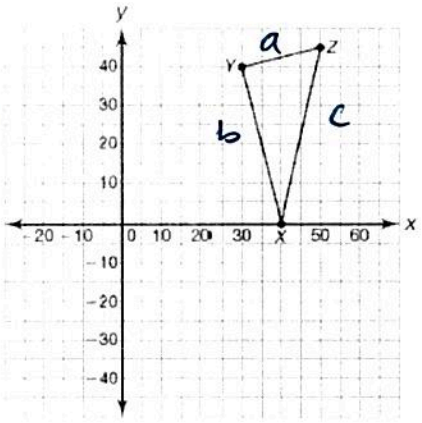
$d = \sqrt{1700}$ $d = \sqrt{2125}$

$d = 41.23$ $d = 46.10$

$\overline{YZ}$

$d = \sqrt{425}$

$d = 20.62$



a. Determine the perimeter of triangle *XYZ*.

107.95 units

b. Explain why triangle *XYZ* is a right triangle.

$\perp$ slopes or side lengths work in $a^2 + b^2 = c^2$

c. Determine the area of triangle *XYZ*.

425.08 units^2

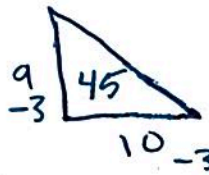
4. What happens to the perimeter of a regular hexagon with side lengths of 5 units when each side length is increased by a factor of 4?

Perimeter increase by factor of 4

5. What happens to the area of a triangle with base 10 units and height 9 units when its dimensions are decrease by 3 units.

non-proportional

Area decreased by 24 units



$\frac{6(7)}{2} = 21$

6. **A trapezoid has bases 12m and 8m and an area of 384m^2. Find its height.**

$A = \frac{1}{2}(b_1 + b_2)h$

$384 = \frac{1}{2}(12 + 8)h$

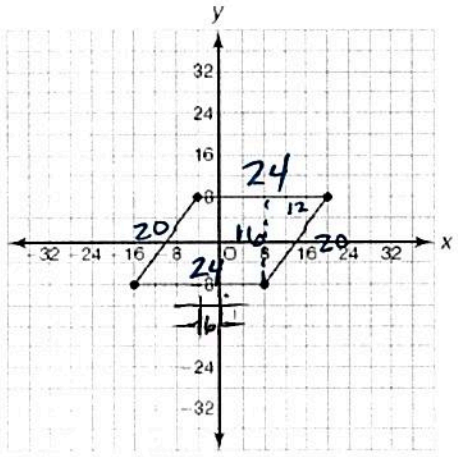
$384 = \frac{1}{2}(20)h$

$384 = 10h$

$h = 38.4$

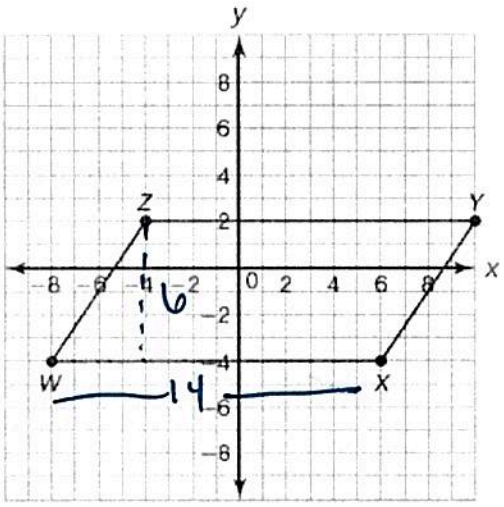
Chapter 3 Review **Name:**_____ **Period:**_____

____ 7. Which statement is *not* true about this polygon?



a. The polygon has a perimeter of 88 units. ✓
b. The polygon has an area of 384 square units. ✓
c. The polygon has 2 pairs of congruent angles. ✓
d. The polygon has 4 congruent sides. X

8. Joel knows that the formulas to determine the areas of rectangles and non-rectangular parallelograms are the same. He multiplies the lengths of $\overline{WX}$ and $\overline{WZ}$ to determine the area of parallelogram *WXYZ*.



a. Has Joel correctly determined the area of the parallelogram? Explain your reasoning.

NO. The height is not $\overline{W}$

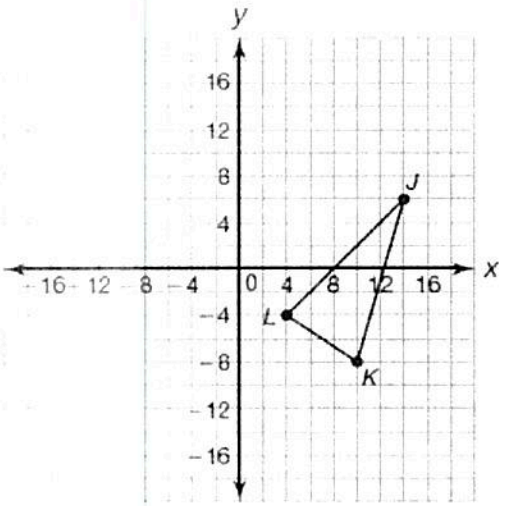
b. Calculate the area of parallelogram *WXYZ*. Show your work.

84 $A = 6(14)$

Chapter 3 Review **Name:**_____ **Period:**_____

Determine its perimeter. Round your answer to the nearest hundredth, if necessary.

9. triangle *JKL*



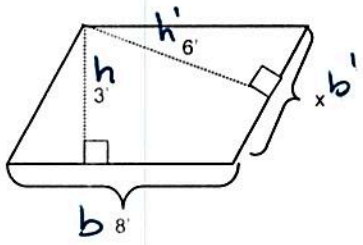
$\overline{JL}$ $d=\sqrt{200}$ $d=14.14$

$\overline{JK}$ $d=\sqrt{212}$ $d=14.56$

$\overline{LK}$ $d=\sqrt{32}$ $d=5.66$

$P=34.36$

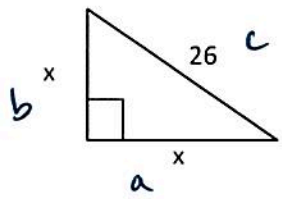
10. Given the parallelogram, find the value of x. X=_____4_____



$A=bh$ $A=8(3)$ $A=24$

$A'=b'h'$ $24=X(6)$ $\frac{24}{6}=X$ $X=4$

11. **Find X** **X=**_____

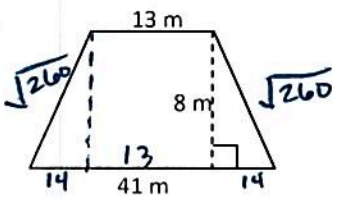


$a^2+b^2=c^2$ $X^2+X^2=26^2$ $2X^2=676$

$X^2=\frac{676}{2}$ $X=\sqrt{338}$ $X=18.38$

For #12-16, find the area and Perimeter. Round to the nearest hundredth if necessary.

12.



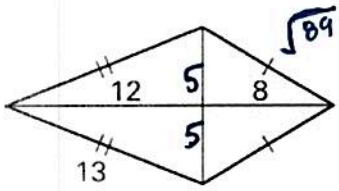
$P=86.25$

$A=216$

$41-13=28\div 2=14$

Chapter 3 Review **Name:**_____ **Period:**_____

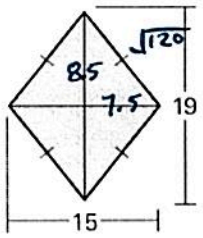
13.



P = 44.87

A = 100

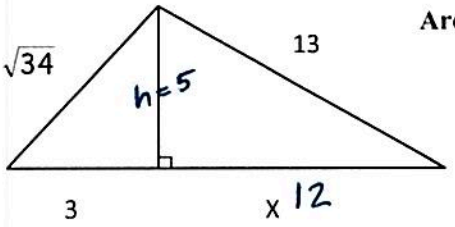
14.



P = 45.34

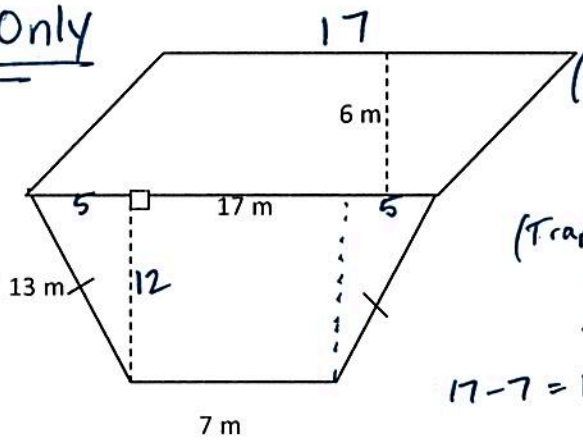
A = 127.5

15.



Area 37.5 Perimeter 33.83

16. ✡ Area Only



(parallelogram)

A = 17(6)

A = 102

(Trapezoid)

$A = \frac{1}{2}(17+7)(12)$

A = 144

17 − 7 = 10 ÷ 2 = 5

Total A = 246