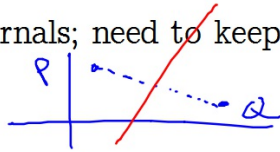


Good afternoon. Warm up in Notes (not journals; need to keep this as a reference)



(Write the question down this time)

Find the equation of the perpendicular bisector of segment PQ with coordinates P(2,4) and Q(8, 2).

① midpoint
 $\left(\frac{2+8}{2}, \frac{4+2}{2}\right)$
 $(5, 3)$

② slope
 $m: \frac{4-2}{2-8} = \frac{2}{-6} = -\frac{1}{3}$
 $m_{\perp} = \frac{3}{1} = \underline{3}$

$$y - y_1 = m(x - x_1)$$
$$y - 3 = 3(x - 5)$$
$$y - 3 = 3x - 15$$
$$y = 3x - 12$$
$$y - y_1 = m(x - x_1)$$

~~Also in notes:~~ Composite Functions

Given: $f(x) = x^2 + 1$ $g(x) = 3x - 2$

Find: 1. $f(2) = 2^2 + 1$
4 + 1
5

2. $g(3) = 3(3) - 2$
9 - 2
7

PEMDAS

$$g(x) = 3x - 2$$
$$g(4) = 3 \cdot 4 - 2$$
$$12 - 2$$

3. $f(g(4))$ 10

$$f(10) = 10^2 + 1$$

4. $f(g(x))$ $100 + 1 = 101$

$$f(3x-2) = (3x-2)^2 + 1$$

Homework: red pens in boxes

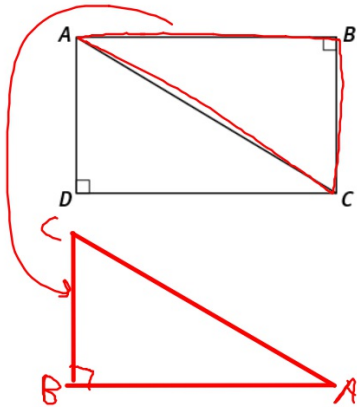
p. 146

4. Yes. Congruent tri. have same side lengths, so their sums will be the same.

5. No; all angles must be the same in congruent triangles.

6. (order matters on these)

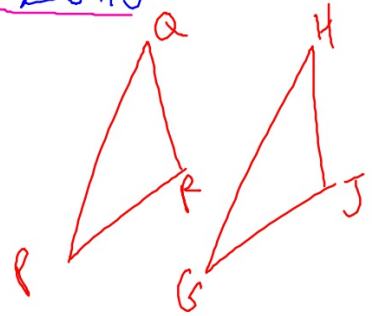
- a. $AB \cong \underline{CD}$
- b. $BC \cong \underline{DA}$
- c. $\angle BAC \cong \angle \underline{DCA}$
- d. $\angle ACB \cong \angle \underline{CAD}$



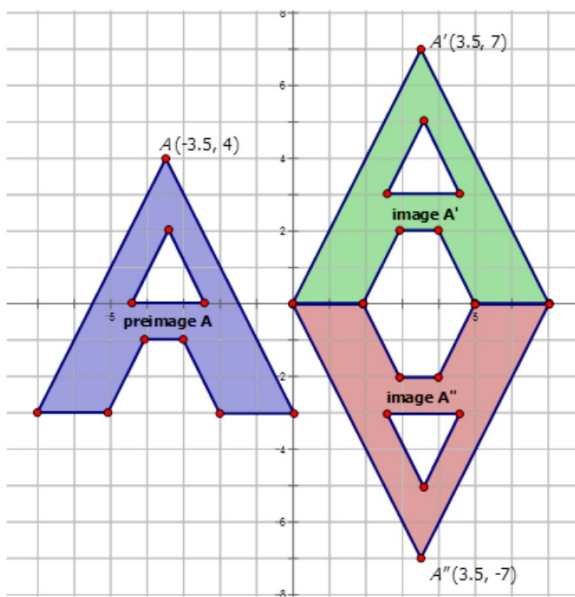
7. (order matters here too)

$$\triangle \underline{PQR} \cong \triangle \underline{GHI}$$

- a. $QR \cong HJ$
- b. $GJ \cong PR$
- c. $\angle R \cong \angle J$
- d. $\angle G \cong \angle P$



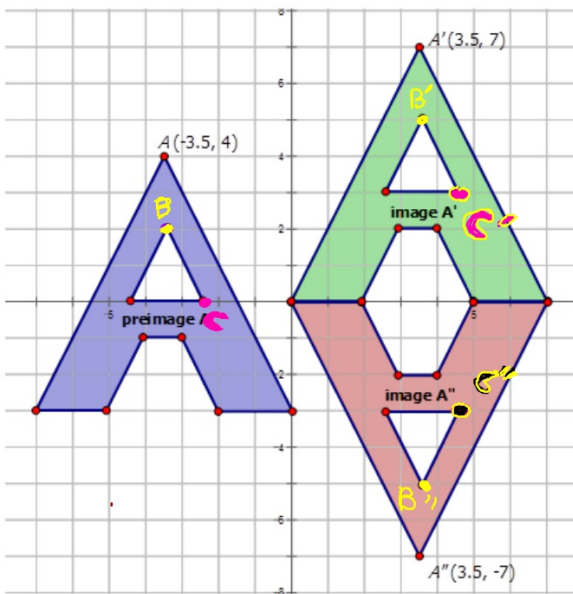
Compositions of Transformations (notes)



How does the purple figure become the green figure? *translation*

How does the green figure then become the red figure? *reflection across x-axis*

So how does the purple become the red? *translation, then reflection*



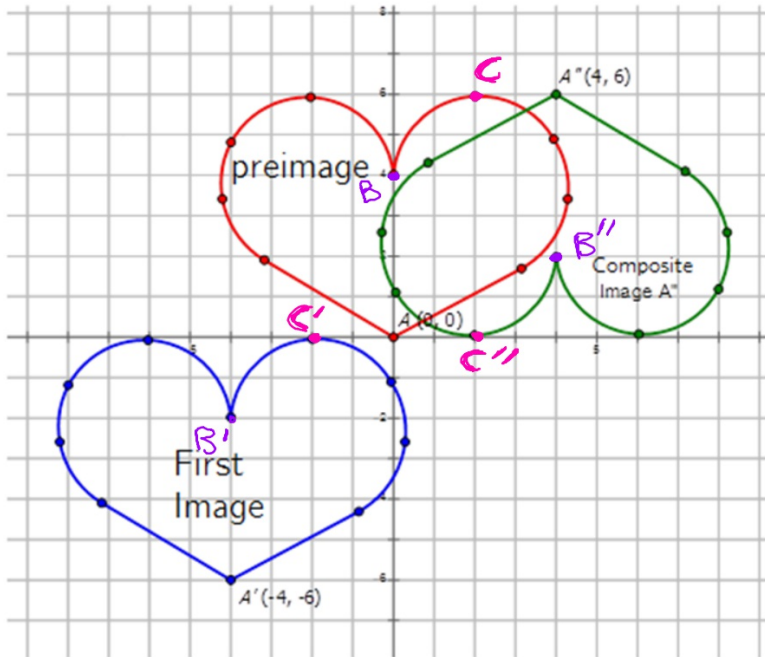
A(-3.5, 4)	A'(3.5, 7)	A''(3.5, -7)
B(-3.5, 2)	B'(3.5, 5)	B''(3.5, -5)
C(-2.5, 0)	C'(4.5, 3)	C''(4.5, -3)

purple to green: $g(x,y) \rightarrow (x+7, y+3)$

green to red: $r(x,y) \rightarrow (x, -y)$

purple to red: $r(g(x,y)) \rightarrow (x+7, -(y+3))$

$$(x,y) \rightarrow (x+7, -y-3)$$



A(0,0)	A'(-4, -6)	A''(4, 6)

$$(x, y) \rightarrow (x-4, y-6)$$

$$(x, y) \rightarrow (-x, -y)$$

$$(x, y) \rightarrow (-(x-4), -(y-6))$$

