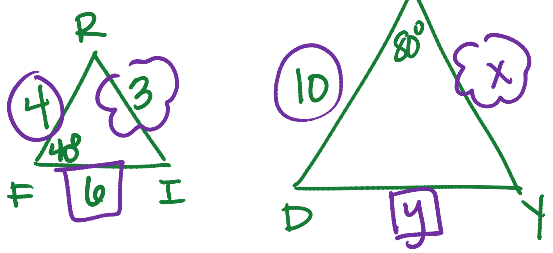
CHAPTER 7 – SIMILARITY REVIEW Key 's Q3 Review!

1) If two polygons are similar, then their corresponding sides are proportional and their corresponding angles are congruent. (7.1)

2) $\Delta FRI \sim \Delta DAY$. Given $m\angle F = 40°$, $m\angle A = 80°$, FR = 4, RI = 3, FI = 6, and DA = 10, find all other angle measures and side lengths. (Draw your own picture!) (7.1, 7.2)



~ ratio: $\frac{4}{10} = \frac{2}{5}$

$\frac{2}{5} = \frac{3}{x}$ | $\frac{2}{5} = \frac{6}{y}$

$2x = 15$ | $2y = 30$

$x = 7.5$ | $y = 15$

∠'s are ≅ so:

$\angle D = 40°$

$\angle R = 80°$

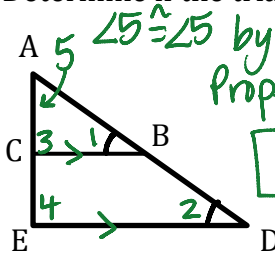
$\angle I = \angle Y = 180 - (80+40) = 60°$

sides are proportional:

AY = 7.5

DY = 15

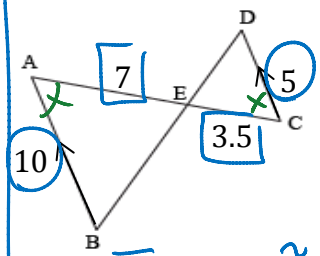
3) Determine if the triangles are similar. If they are, why so? If they are not, why not? (7.2)



$\angle 5 \cong \angle 5$ by Reflexive Property

AA~

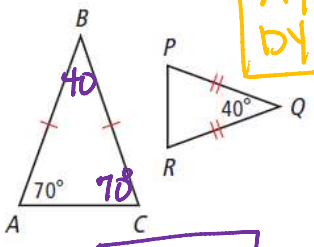
Since corresponding ∠'s 1+2 are ≅, $\overline{CB} \parallel \overline{ED}$. Since ll lines, Corresponding ∠'s 3+4 are ≅



- $\overline{AB} \parallel \overline{DC}$, so $\angle A \cong \angle C$
- $\frac{10}{5} \stackrel{?}{=} \frac{7}{3.5}$

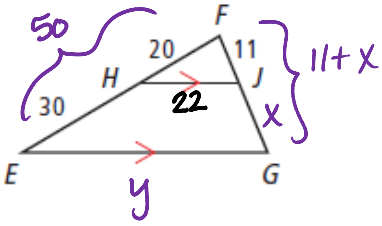
$\frac{2}{1} = \frac{2}{1}$ ✓

SAS~



SAS~

4) Find JG and EG. (7.3)



For x: $\frac{20}{50} = \frac{11}{11+x}$

$20(11+x) = 550$

$220 + 20x = 550$

$20x = 330$ so $x = 16.5$

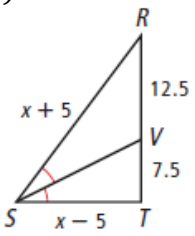
For y: JG = 16.5, EG = 55

$\frac{20}{50} = \frac{22}{y}$

$20y = 1100$

$y = 55$

5) Find ST. (7.3)



$\frac{x+5}{12.5} = \frac{x-5}{7.5}$

$7.5(x+5) = 12.5(x-5)$

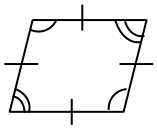
$7.5x + 37.5 = 12.5x - 62.5$

$100 = 5x$

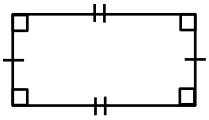
$20 = x$

Be careful. question is asking for ST.. $ST = 20 - 5$ so ST = 15

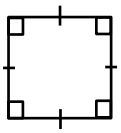
6) Determine if the figures below are regular or irregular. (6.1)



Irregular



Irregular



Regular

7) What is the sum of the interior angles of a regular nonagon? (6.1)

$S_I = (n-2)180$

$= (9-2)180$

$S = 1{,}260°$

* What if I would have asked you for each int ∠?

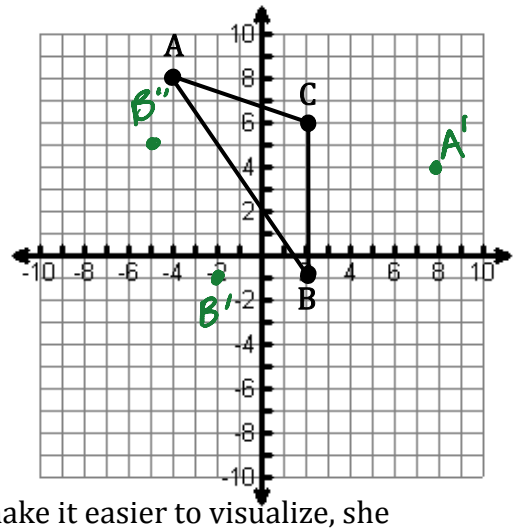
8) What is the measure of each exterior angle of a regular nonagon? (6.1)

$S_E = 360°$ so each $= \frac{360}{9} = 40°$

What if I would have asked you for the sum of ext ∠'s?

CHAPTER 9 – TRANSFORMATIONS REVIEW

For 9-10, use the figure to the right to determine the final coordinates.



9) Given ΔABC, rotate point A 270° about the origin.

270° = counterclockwise 270° (left)

A (8,4)

10) Given ΔABC, reflect point B over they-axis and then translate by <-3,6>.

B' (-2,-1) Does the order matter? YES!

B'' (-5,5)

11) Mrs. Klotz is trying to figure out where to put the baby crib! To make it easier to visualize, she created a blue print of the nursery using grid paper, and made each box represent one foot. After plotting where she thought she wanted the crib, she decided that it needed to be moved using the vector <3, 8>. She then realized that she didn't leave enough room for the rocking chair, so she decided to move it using the vector < -2, 4>. If the right corner of the crib was initially at the point (4, -2), where does the right corner end up?

Start (4,-2)

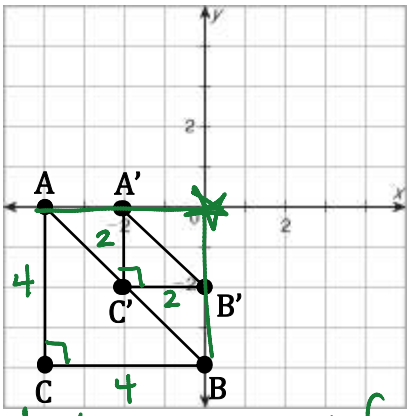
<+3,+8> } <1,12>

<-2,+4> }

end (5,10)

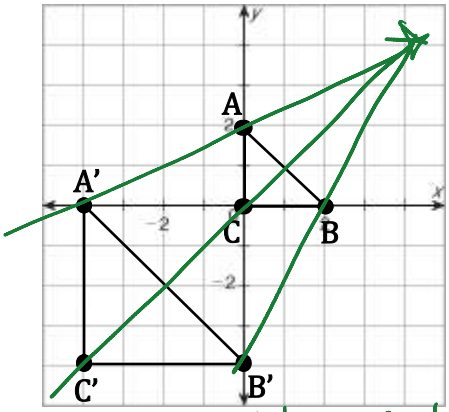
12) Describe the transformation below. Then determine what point the figure was transformed from.

a)



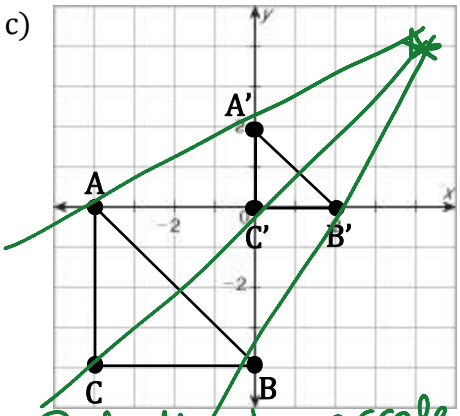
Reduction by a scalefactor of $\frac{1}{2}$ from (0,0)

b)



Enlargement by a scale factor of 2 from (4,4)

c)



Reduction by a scale factor of $\frac{1}{2}$ from (4,4)

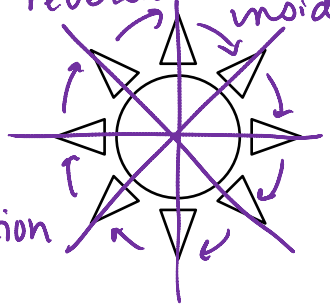
13) Mrs. Berenson decided to make a birthday card using multiple transformations. She completed the transformations in the following order: she translated the figure using vector <3, -2>, she reflected the image over the x-axis, then rotated the figure 90° about the origin. Write the transformations she used using composition of transformations notation.

★ Be careful..

$R_{90°,(0,0)} \circ R_{x\text{-axis}} \circ T_{\langle 3,-2\rangle}$ ( ) → ( ) wont be there but this is why it looks reversed... work from inside out

(3rd) (2nd) (1st)

For 14-15, use the figure to the right.



14) Does the figure have line symmetry? YES, 4 L.O.S

If so, how many lines of symmetry does the figure have?

15) Does the figure have rotational symmetry? YES, order of 8

If so, what is the order and degree of rotation? $\frac{360}{8} = 45°$ of Rotation