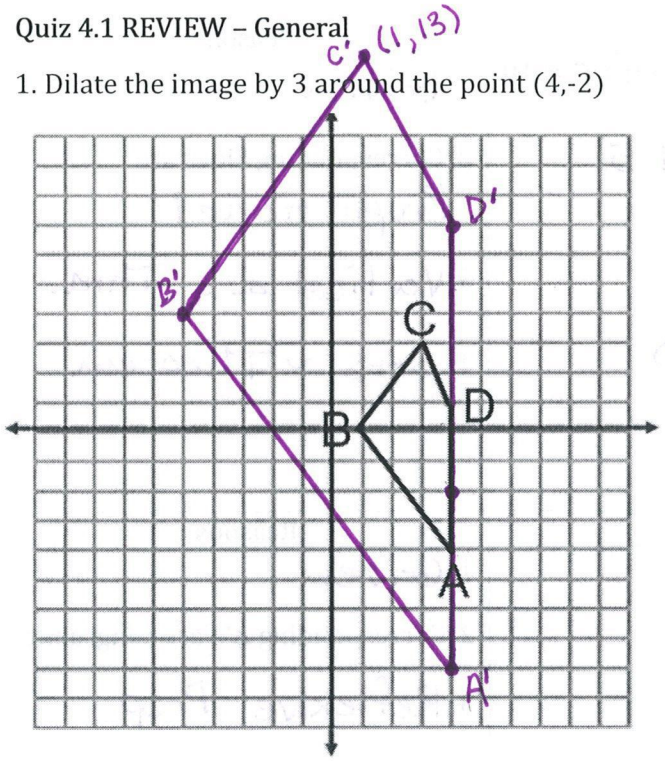
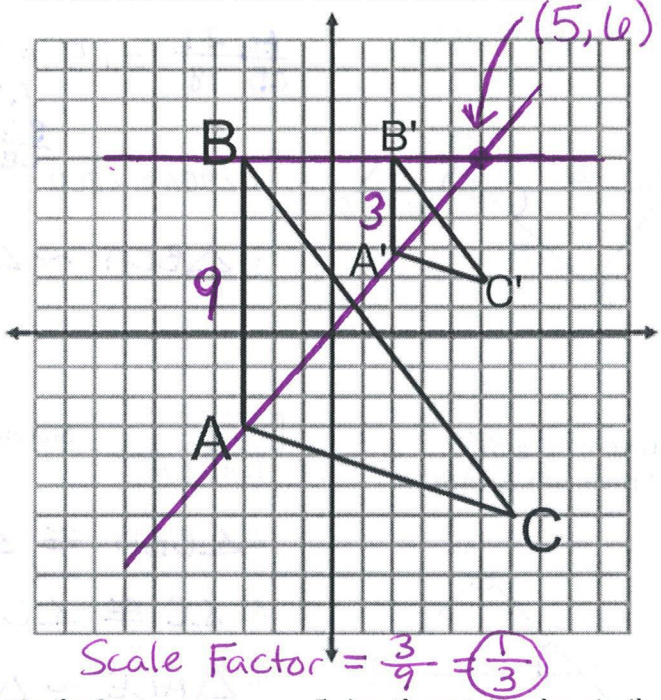
Quiz 4.1 REVIEW – General

Name: Answer Key

1. Dilate the image by 3 around the point (4,-2)

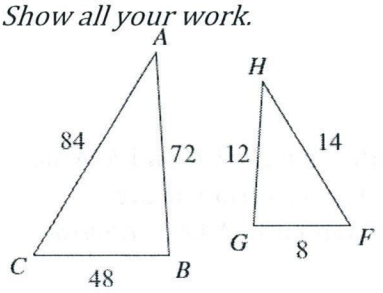


2. Find the scale factor and the center dilation



Scale Factor $= \frac{3}{9} = \frac{1}{3}$

3. Are these triangles similar? If so, by what theorem? *Show all your work.*

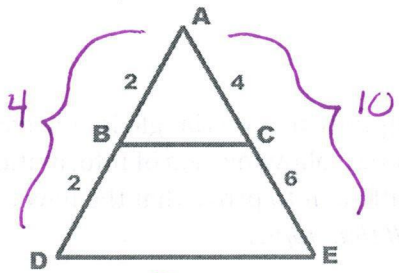


$\frac{CB}{GF} = \frac{48}{8} = 6$ yes, by SSS ~ Thm

$\frac{AB}{HG} = \frac{72}{12} = 6$

$\frac{AC}{HF} = \frac{84}{14} = 6$

4. Are these triangles similar? If so, by what theorem? *Show all your work.*



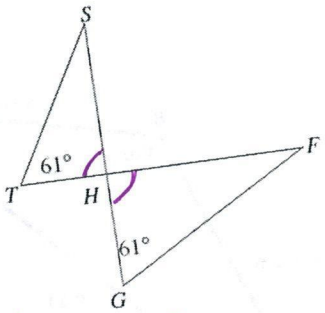
$\frac{AB}{AD} = \frac{2}{4} = \frac{1}{2}$

$\frac{AC}{AE} = \frac{4}{6} = \frac{2}{3}$

$\angle A \cong \angle A$

Not Similar

5. Are these triangles similar? If so, by what theorem? *Show all your work.*

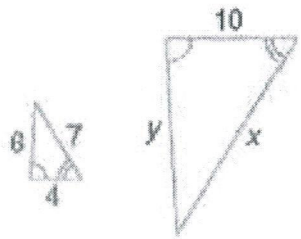


$\angle T \cong \angle G$

$\angle SHT \cong \angle FHG$

yes, by AA ~ Post.

6. Are these triangles similar? If so, by what theorem? *Show all your work.* Then, solve for the values of x and y.

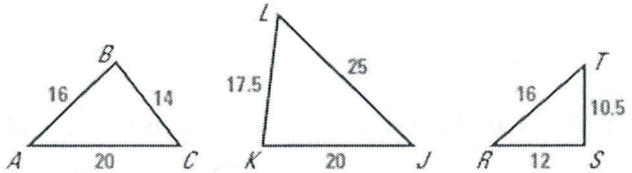


yes, similar by AA ~ Post

$\frac{4}{10} = \frac{7}{x}$ $\quad x = 17.5$

$\frac{4}{10} = \frac{6}{y}$ $\quad y = 15$

7. Is either ΔJKL or ΔRST similar to ΔABC? *Show all your work.*



$\frac{\Delta ABC}{\Delta LKJ}$ $\quad \frac{14}{17.5} = 0.8$

$\frac{AB}{KJ} = \frac{16}{20} = 0.8$

$\frac{AC}{LJ} = \frac{20}{25} = 0.8$

yes, by SSS ~ Thm.

$\frac{\Delta ABC}{\Delta TRS}$ $\quad \frac{14}{10.5} = 1.3$

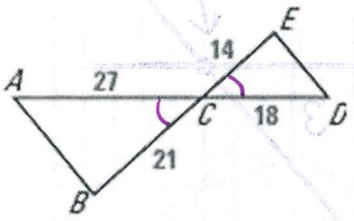
$\frac{AB}{RS} = \frac{16}{12} = 1.3$

$\frac{AC}{RT} = \frac{20}{16} = 1.25$

Not Similar

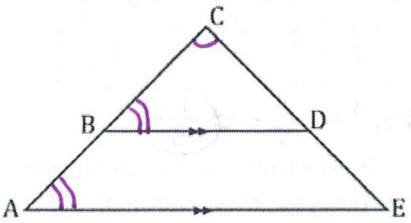
8. Given: $AC = 27$; $BC = 21$
$EC = 14$; $DC = 18$

Prove: $\Delta BCA \sim \Delta ECD$



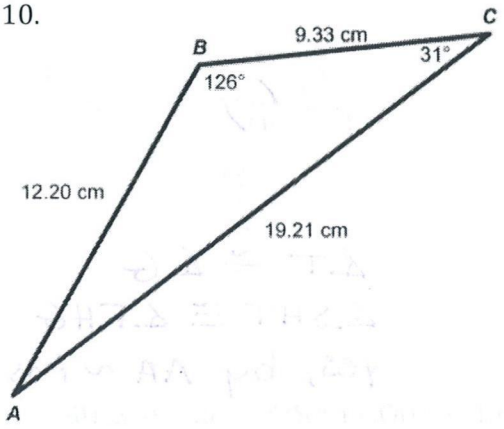
Statements	Reasons
1. $AC = 27$; $BC = 21$; $EC = 14$; $DC = 18$	1. Given
2. $\frac{AC}{CD} \frac{27}{18} = 1.5 = \frac{21}{14} = 1.5$ $\frac{BC}{CE}$	2. Corresponding Sides are Proportional
3. $\angle BCA \cong \angle ECD$	3. Vertical $\angle$'s Thm.
4. $\Delta BCA \sim \Delta ECD$	4. SAS ~ Theorem

9. Given: $\overline{AE} \parallel \overline{BD}$
Prove: $\Delta ACE \sim \Delta BCD$



Statements	Reasons
1. $\overline{AE} \parallel \overline{BD}$	1. Given
2. $\angle CBD \cong \angle A$	2. Corresponding $\angle$'s are congruent
3. $\angle C \cong \angle C$	3. Reflexive Prop.
4. $\Delta ACE \sim \Delta BCD$	4. AA ~ Postulate

10.



Suppose a new triangle is constructed with vertices D, E, and F. Which of the following sets of information about the new triangle are sufficient to prove that the new triangle is similar to ΔABC? *Choose all that apply.*

a] $EF = 18.66$ cm
$DE = 24.40$ cm

b] $m\angle D = 23°$
$m\angle F = 31°$

c] $m\angle F = 31°$
$DE = 12.20$ cm

d] $m\angle F = 126°$
$DF = 38.42$ cm
$DE = 24.40$ cm

e] $m\angle F = 126°$
$DF = 38.42$ cm
$EF = 18.66$ cm

11. Which of the following sets of conditions could be used to prove $\Delta ABC \sim \Delta PQR$? *Select all that apply.*

a] $\angle B \cong \angle Q$
$\frac{BC}{QR} = \frac{AC}{PR}$

b] $\angle A \cong \angle P$
SAS ~ $\frac{AC}{PR} = \frac{AB}{PQ}$

c] $\angle B \cong \angle Q$
AA ~ $\angle C \cong \angle R$

d] $\frac{AB}{PQ} = \frac{BC}{QR} = \frac{AC}{PR}$
SSS ~

e] $\frac{AB}{PQ} = \frac{BC}{QR}$