

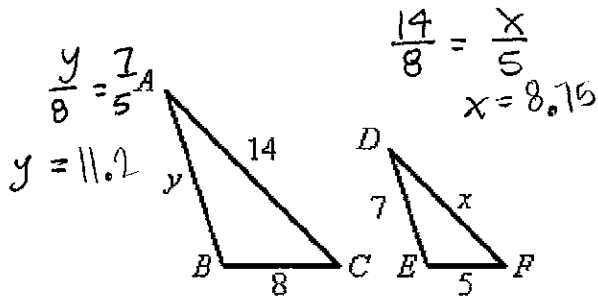
<p>1. If <math>\frac{6}{x-2} = \frac{10}{x}</math>, then <math>x =</math> <u>5</u>.  <math>10x - 20 = 6x \quad -20 = -4x</math></p>	<p>2. If <math>\frac{P}{Q} = \frac{R}{S}</math>, Write another true statement.  <math>\frac{P+Q}{Q} = \frac{R+S}{S} \therefore \frac{Q}{P} = \frac{S}{R} \therefore \frac{P}{R} = \frac{Q}{S}</math></p>
<p>3. The sides of a triangle are 7, 9, and 12. Find the length of the longest side of a similar triangle whose <u>shortest side is 14</u>. <u>14, 18, 24</u>  <del>7, 9, 12</del></p>	<p>4. Solve: <math>17x = 8 \cdot 24</math>  <math>x = 11.3</math>  <math>\frac{8}{17} = \frac{x}{24}</math></p>
<p>5. Solve the proportion <math>\frac{8}{x-1} = \frac{10}{x}</math>.  <math>10(x-1) = 8x</math>  <math>10x - 10 = 8x</math>  <math>-10 = -2x \quad x = 5</math></p>	<p>6. Solve the proportion <math>\frac{5}{2x} = \frac{x}{8}</math>.  <math>2x^2 = 5 \cdot 8</math>  <math>\sqrt{x^2} = \sqrt{20} \quad x = 2\sqrt{5}</math></p>
<p>7. If two polygons are SIMILAR, then the corresponding sides must be _____.  <u>equal</u> similar  <del>or</del> congruent.</p>	<p>8. If two polygons are SIMILAR, then the corresponding angles must be _____.  <u>equal</u> congruent  <del>or</del> congruent.</p>
<p>9. Solve for x.  <math>2x + 8 = 7x - 7</math>  <math>-7x - 8 - 7x - 8</math>  <math>-15x = -15</math>  <math>x = 3</math>  <math>\frac{7}{2x+8} = \frac{1}{x-1}</math></p>	<p>10. At the basketball game, the concession stand sold 82 slices of pizza and 56 nachos. What was the ratio of nachos to pizza slices.  <u>56:82</u></p>



<p>11. Find BC to the nearest tenth. The figure is not drawn to scale.  <math>a^2 + b^2 = c^2</math>  <math>a^2 + 8^2 = 17^2</math>  <math>a^2 = 225</math>  <math>a = 15</math>  <math>\triangle CED \sim \triangle CBA</math> (AA)  <math>\frac{17}{8} = \frac{17+x}{18}</math>  <math>306 = 136 + 8x</math>  <math>170 = 8x</math>  <math>21.25</math>  <u>21.3</u></p> <p>a. 38.3          b. 0.2          c. 40.5          (d) 21.3</p>	<p>12. Find AB to the nearest tenth. The figure is not drawn to scale.  <math>\triangle CED \sim \triangle CBA</math> (AA)  <math>\frac{38}{10} = \frac{53}{x}</math>  <math>x = 13.9</math>  <u>ED    BA</u></p>
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$$5 \times 14 = 70$$

13. Given that  $\triangle ABC \sim \triangle DEF$ , solve for  $x$  and  $y$ .

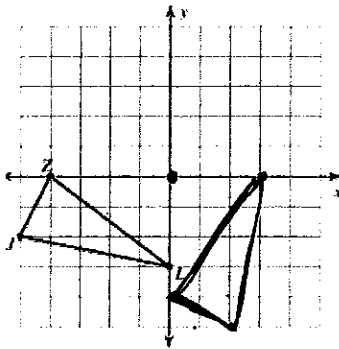


14.

$\triangle ABC$  and  $\triangle XYZ$  are similar. If  $AB$ ,  $BC$ , and  $AC$  are 6 inches, 9 inches, and 12 inches, respectively, and  $XY$  is 11 inches, find  $XZ$ . (Hint: Draw and label both triangles)

$6:9:12$   
 $11: \quad :$   
 $XY \quad YZ \quad XZ$   
 $\frac{6}{11} = \frac{9}{x} = \frac{12}{x}$   
 $16.5 \quad 22$   
 $XZ = 22$

15. rotation  $90^\circ$  counterclockwise about the origin



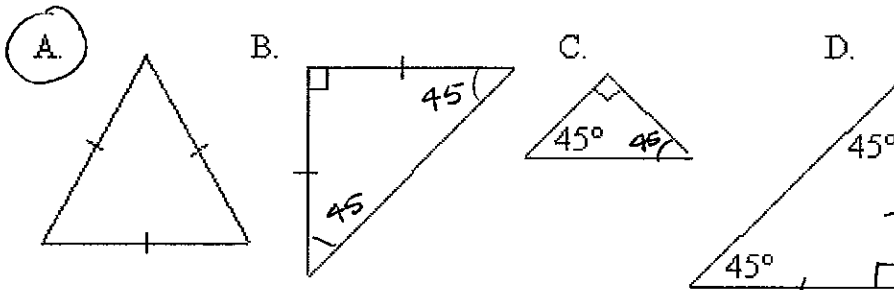
16.

Find the measure of the angles in the following triangle.  
 The ratio of the measure of the angles is 4:5:9.

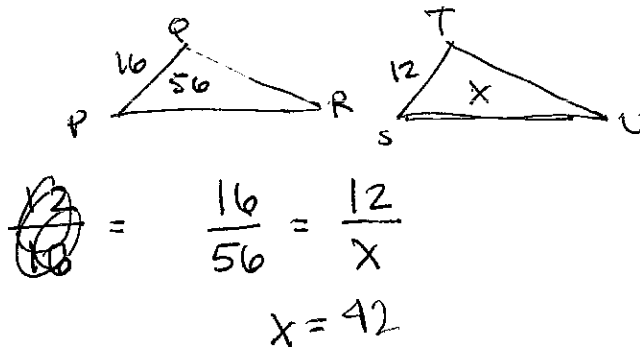
$= 180^\circ$   
 $4x + 5x + 9x = 180$   
 $18x = 180$   
 $x = 10$

**40: 50: 90**

17. Which triangle is not similar to any of the others?

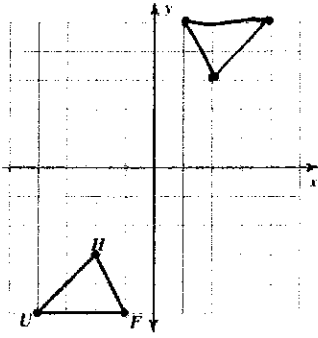


18. The perimeter of  $\triangle PQR$  is 56,  $PQ = 16$ ,  $\triangle PQR \sim \triangle STU$ , and  $ST = 12$ . What is the perimeter of  $\triangle STU$ ?



clockwise

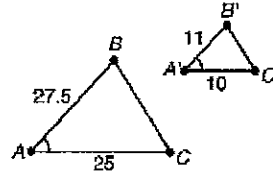
19. rotation  $180^\circ$  about the origin



~~SAME~~

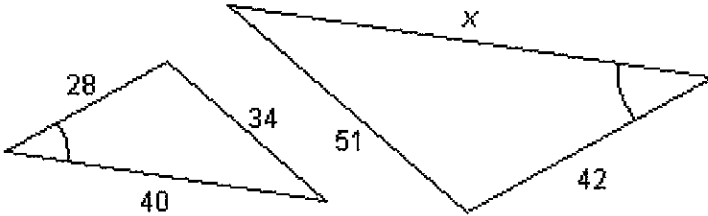
20.

Shown below is an illustration of the \_\_\_\_\_.



- a. AA Similarity Postulate
- b. SAS Congruence Theorem
- c. SSS Similarity Theorem
- d. SAS Similarity Theorem

21. What value of  $x$  will make the two triangles similar?



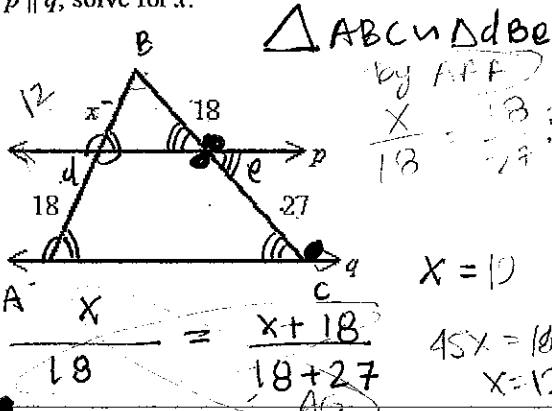
~~20~~ ~~3~~

$$\frac{34}{40} = \frac{51}{x}$$

$$x = 60$$

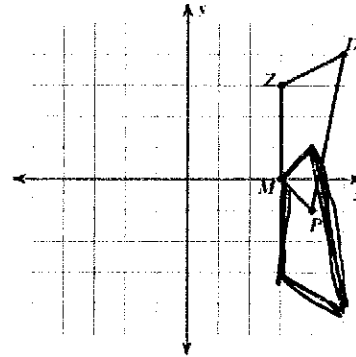
OK 22. If  $p \parallel q$ , solve for  $x$ .

both  
sides  
work

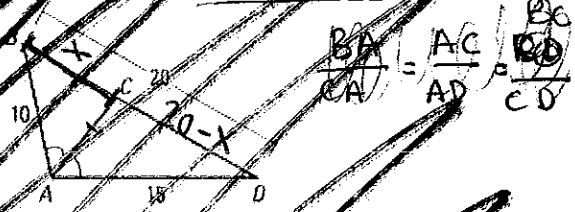


23.

reflection across the x-axis

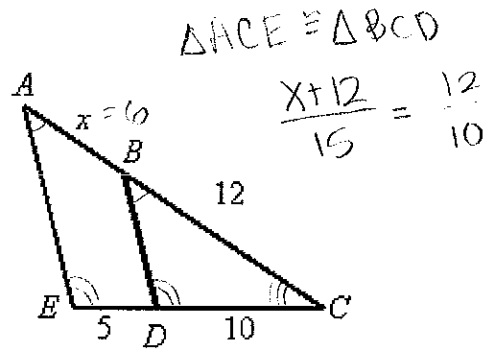


24. In the diagram  $\angle BAC \cong \angle CAD$ . Use the given side lengths to find the length of  $BC$ .

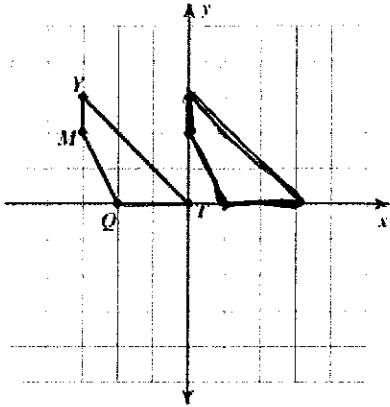


25.

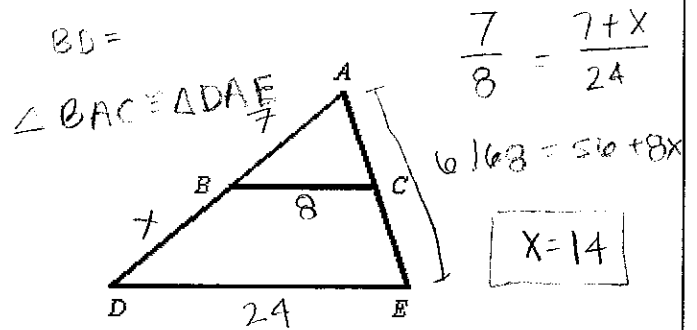
Given  $\overline{AE} \parallel \overline{BD}$ . Solve for  $x$ .



26. translation: 3 units right



27. In the figure shown,  $\overline{BC} \parallel \overline{DE}$ ,  $AB = 7$  yards,  $BC = 8$  yards,  $AE = 6$  yards, and  $DE = 24$  yards. Find  $BD = x$



28. At the same time of day, a man who is 74 inches tall casts a 29.6-inch shadow and his son casts a 20-inch shadow. Use similar triangles to determine the height of the man's

$$\frac{74}{29.6} = \frac{x}{20}$$

$x = 50$  inch tall

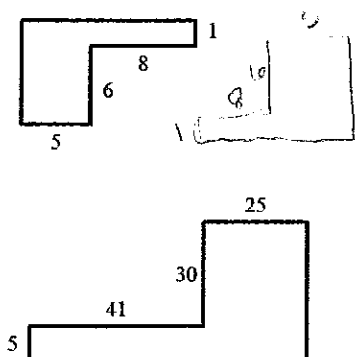
29. A map has a scale of  $\frac{1}{2}$  inch : 10 miles. If the actual distance between the two cities is 80 miles, how far apart are they on the map?

$$\frac{0.5}{10} = \frac{x}{80}$$

$$40 = 10x$$

$x = 4$  inches

30. Are the two polygons similar? (They are not drawn to scale, but assume all angles are  $90^\circ$ .) If not, explain why.



$$\frac{5}{6} = \frac{25}{30} \checkmark$$

$$\frac{6}{8} = \frac{30}{41} \checkmark$$

$$\frac{8}{1} = \frac{41}{5} \times$$

NO  
The sides are not proportional.