

Section 1 - Proportions. Solve each proportion; show all work.

1. $\frac{4}{5} = \frac{12}{x}$

x = _____

2. $\frac{3}{45} = \frac{1}{5x}$

x = _____

3. $\frac{17x}{9} = \frac{51}{9}$

x = _____

4. $\frac{x}{2} = \frac{8}{x}$

x = _____

x = _____

5. $\frac{8x}{3} = \frac{4}{6x}$

x = _____

x = _____

6. $\frac{x+5}{7} = \frac{8}{4}$

x = _____

7. $\frac{x}{2} = \frac{7}{2x+3}$

x = _____

x = _____

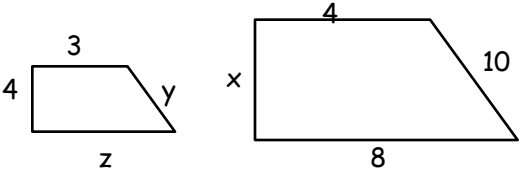
8. $\frac{x+1}{x+2} = \frac{x+3}{x+5}$

x = _____

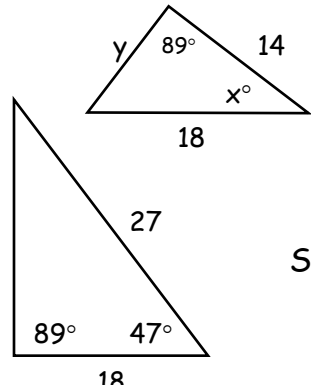
9. $\frac{x+3}{2x+6} = \frac{2}{x+2}$

x = _____

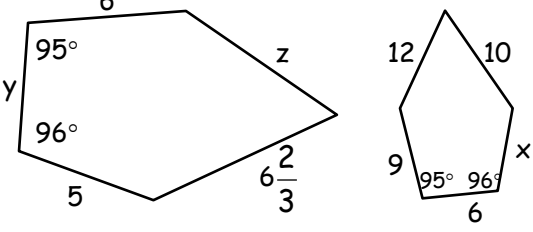
Section 2 - Similar Triangles. For each, state the scale factor and find the value of each variable.

1. 

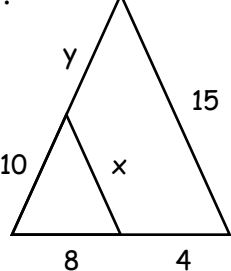
Scale Factor: _____
 x = _____
 y = _____
 z = _____

2. 

Scale Factor: _____
 x = _____
 y = _____
 z = _____

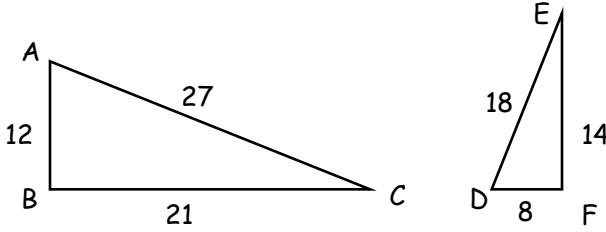
3. 

Scale Factor: _____
 x = _____
 y = _____
 z = _____

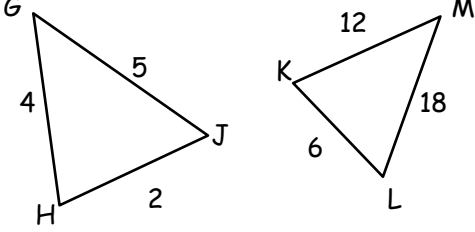
4. 

Scale Factor: _____
 x = _____
 y = _____

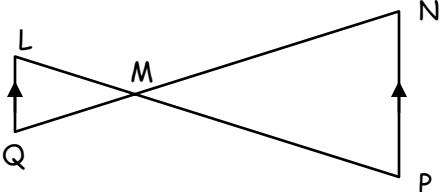
Section 3 - Directions: Determine whether the triangles are similar. If they are, name the two similar triangles and give a reason (AA Similarity, SAS Similarity or SSS Similarity). If you cannot prove that they are similar, circle no conclusion.

1. 

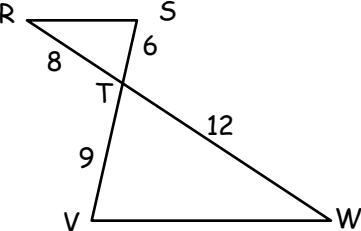
Triangles: _____
 Reason: _____
 No Conclusion

2. 

Triangles: _____
 Reason: _____
 No Conclusion

3. 

Triangles: _____
 Reason: _____
 No Conclusion

4. 

Triangles: _____
 Reason: _____
 No Conclusion

Section 4 - Similar Triangles. For each, state the scale factor and find the value of each variable.

1.

Scale Factor: _____
 $x =$ _____
 $y =$ _____
 $z =$ _____

2.

Scale Factor: _____
 $x =$ _____
 $y =$ _____

3.

Scale Factor: _____
 $x =$ _____
 $y =$ _____
 $z =$ _____

4.

Scale Factor: _____
 $x =$ _____
 $y =$ _____

Section 5 - Write a proportions and solve. For some problems, draw a picture may be helpful.

1. If 6 pounds of apples cost \$9, then how much would 21 pounds of apples cost?

Answer: _____

2. The scale on a map is 1 inch equals 5 feet. What is the distance between two points on the map that are $8 \frac{1}{2}$ inches apart on the map?

Answer: _____

3. The angles in a pentagon follow the ratio 2:3:4:4:5. Find the measure of each angle.

Answer: _____

4. A man 6 feet tall casts a shadow that is 11 feet long. A building casts a shadow of 139 feet long. What is the height of the building?

Answer: _____

5. A sign is 8 feet high and casts a 5-foot shadow while a nearby flagpole casts a 20-foot shadow. How high is the flagpole?

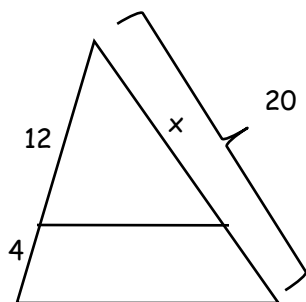
Answer: _____

6. The shadow of a 4 meter pole is 6 meters long at the same time the shadow of a tower is 52.5 meters long. How tall is the tower?

Answer: _____

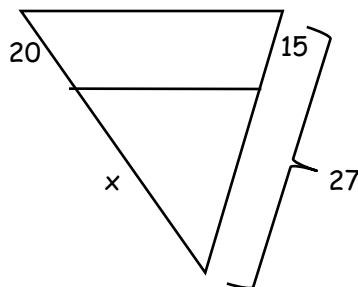
Section 6 - Write a proportions and solve for x.

1.



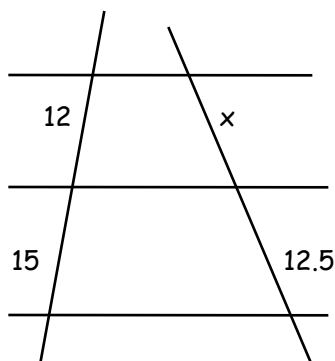
x: _____

2.



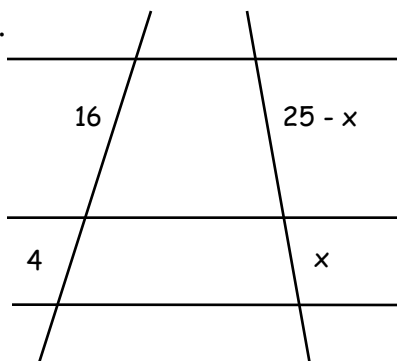
x: _____

3.



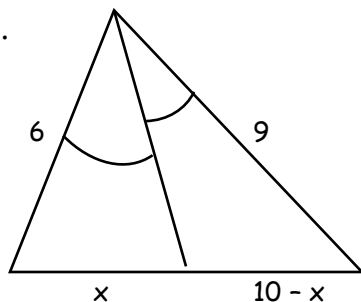
x: _____

4.



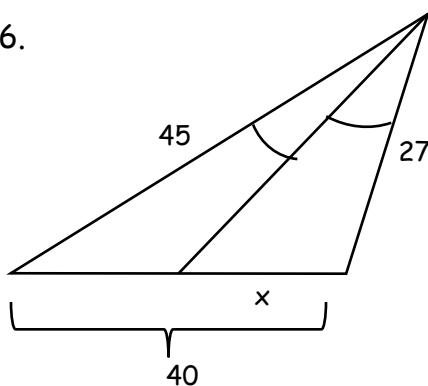
x: _____

5.



x: _____

6.



x: _____