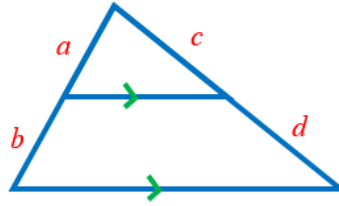


Theorem

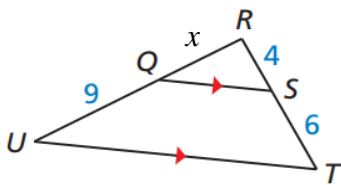
Theorem 8.6 Triangle Proportionality Theorem

If a line parallel to one side of a triangle intersects the other two sides, then it divides the two sides proportionally.

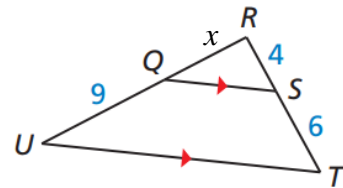


Example:

Ex 1: Find x by drawing the overlapping triangles. Do not use the short cut shown above.



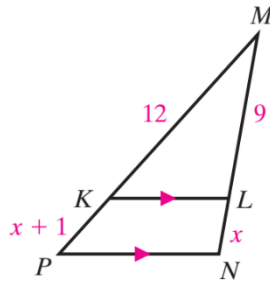
Ex 2: Find x using the short cut shown above.



HW #4: **Jumbled Answers for 1-6:** 3, 4, 5, 6.65, 7.5, 8, 11.67, 20.25, 21.33

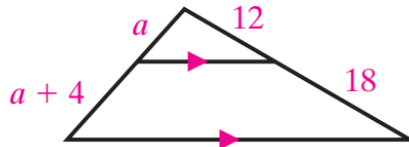
1. Find the value of x .

$x =$



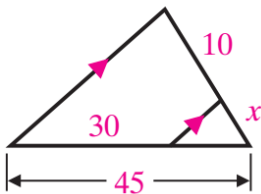
2. Find the value of a .

$a =$



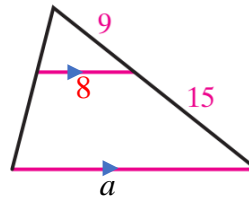
3. Find the value of x .

$x =$



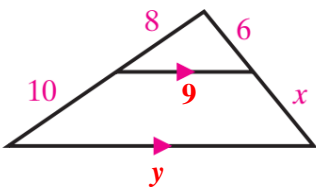
4. Find the value of a . Be careful here. You can't use the short cut. Make sure you know why.

$a =$



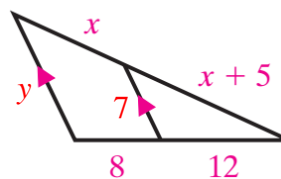
5. Find the value of x and y .

$x =$
 $y =$



6. Find the value of x and y .

$x =$
 $y =$



7. $\triangle ABC \sim \triangle DEF$.

If $AB = 6$ and $AC = 8$, which statement will justify similarity by SAS?

- (1) $DE = 9$, $DF = 12$, and $\angle A \cong \angle D$
- (2) $DE = 8$, $DF = 10$, and $\angle A \cong \angle D$
- (3) $DE = 36$, $DF = 64$, and $\angle C \cong \angle F$
- (4) $DE = 15$, $DF = 20$, and $\angle C \cong \angle F$

8. Determine if the triangles are similar. Hint: Check to see if the sides are proportional.

9. $\triangle DFG \sim \triangle HKM$.

- a) scale factor: _____
- b) $m\angle K =$ _____
- c) $m\angle M =$ _____
- d) $MK =$ _____
- e) $GD =$ _____

10. $ABCD \sim EFGD$. What is the value of x, y , and $m\angle C$

$x =$ $y =$ $m\angle C =$

11. Determine why the triangles shown in the figure are similar and then find x . Show equation.

$\triangle ADC \sim \triangle$ _____ by _____ since _____

$x =$ _____

12. A person that is 5 feet tall casts a shadow that is 8 feet long. At the same time a nearby tree casts a shadow that is 35 feet long. Find the height of the tree. Round to nearest foot.

13. Write each in simple radical form.

a) $3\sqrt{12}$ b) $5\sqrt{27}$

Jumbled answers:
 $4\sqrt{2}$
 $6\sqrt{3}$
 $15\sqrt{3}$

14. Write each in simple radical form.

a) $\frac{3}{\sqrt{7}}$ b) $\frac{10}{\sqrt{2}}$

Jumbled answers:
 $5\sqrt{2}$
 $\frac{3\sqrt{7}}{7}$
 $8\sqrt{2}$

15. Simplify.

a) $5\sqrt{9}$
b) $3\sqrt{16}$
c) $10\sqrt{25}$

Jumbled answers:
12 14
50 7
15

16. Simplify.

a) $\sqrt{2}\sqrt{3}$
b) $\sqrt{5}\sqrt{5}$
c) $2\sqrt{3}\cdot 4\sqrt{5}$
d) $5\sqrt{3}\cdot 5\sqrt{3}$

Jumbled answers:
 $\sqrt{6}$
 $8\sqrt{15}$
75 5