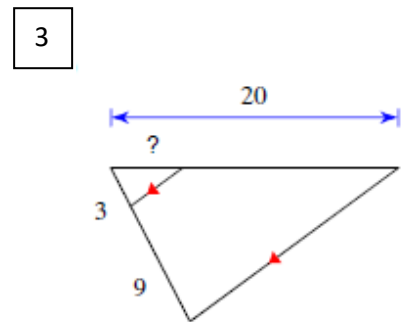
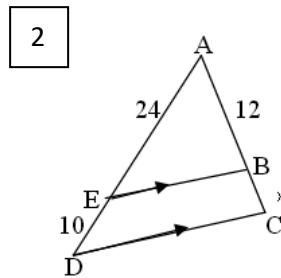
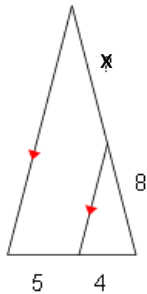


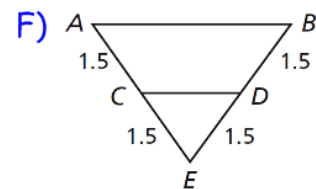
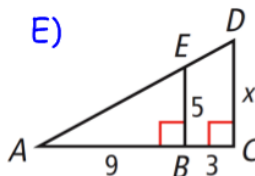
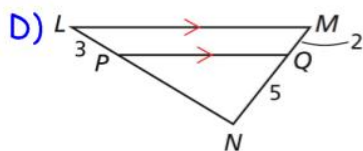
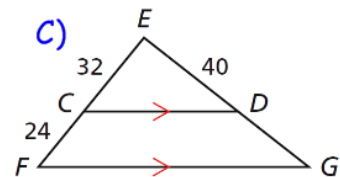
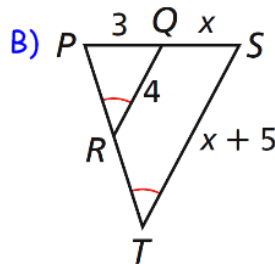
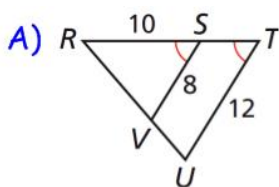
Side – Splitter Thm:

| Theorem 7-4-1 Triangle Proportionality Theorem | | |
|--|---|---------------------------------|
| THEOREM | HYPOTHESIS | CONCLUSION |
| If a line parallel to a side of a triangle intersects the other two sides, then it divides those sides proportionally. | <p>$\overline{EF} \parallel \overline{BC}$</p> | $\frac{AE}{EB} = \frac{AF}{FC}$ |

Practice Problems: Find the value of x. Write the proportion using side – splitter thm and solve.



4. Which of the following are cases of side splitters?

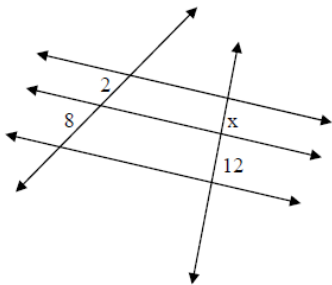


Corollary 7-4-3 Two-Transversal Proportionality

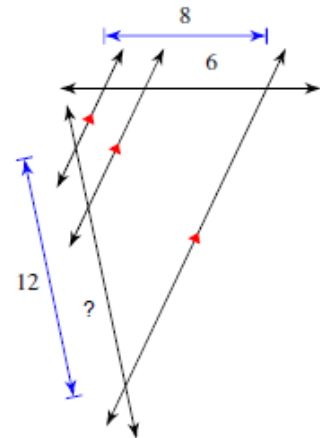
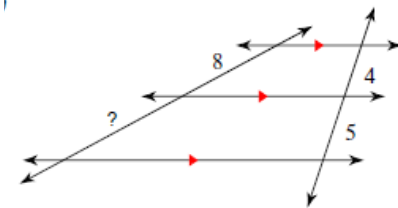
| THEOREM | HYPOTHESIS | CONCLUSION |
|---|------------|---------------------------------|
| If three or more parallel lines intersect two transversals, then they divide the transversals proportionally. | | $\frac{AC}{CE} = \frac{BD}{DF}$ |

Practice Problems: Find the value of x , using Transversal Proportionality Thm. Write proportion and solve.

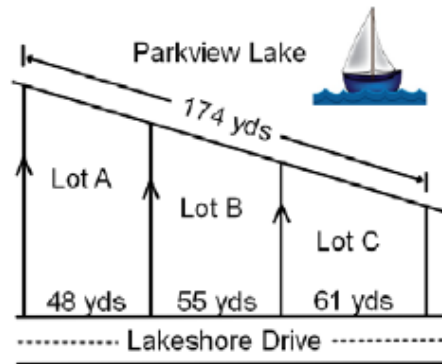
5



6

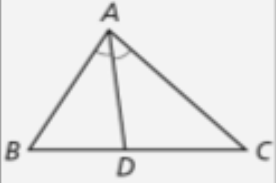


8 The real estate term “lake frontage” refers to the distance along the edge of a piece of property that touches a lake.



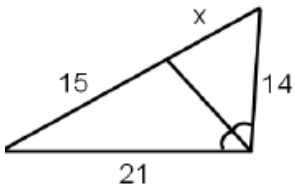
a. Find the lake frontage (to the nearest tenth of a yard) for each lot shown.

Theorem 7-4-4 Triangle Angle Bisector Theorem

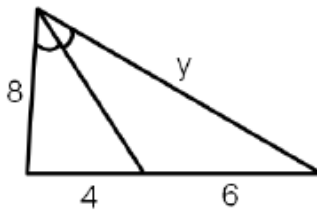
| THEOREM | HYPOTHESIS | CONCLUSION |
|---|---|---------------------------------|
| <p>An angle bisector of a triangle divides the opposite side into two segments whose lengths are proportional to the lengths of the other two sides. ($\Delta \angle$ Bisector Thm.)</p> |  | $\frac{BD}{BA} = \frac{CD}{CA}$ |

Practice Problems: Find the value of variable. Write the proportion and solve.

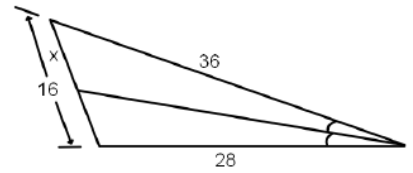
9



10



11

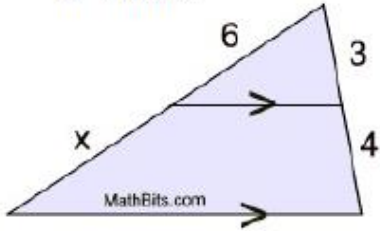


Applied Geometry

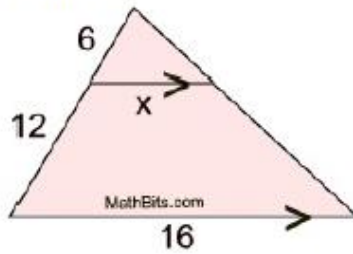
CW/HW Ch 7 D5: Applying Properties of Similar Triangles

Can you solve each of these using SIDE – SPLITTER THM? If you can, solve.

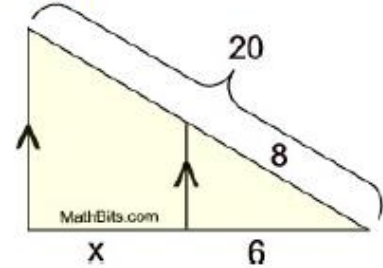
1. Find x .



2. Find x .

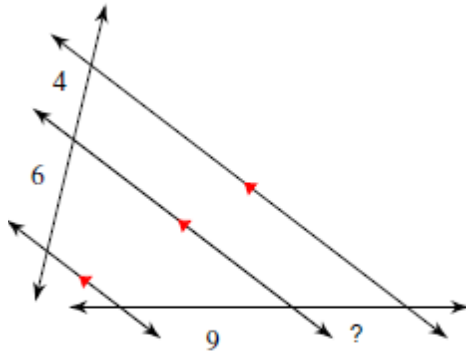


3. Find x .

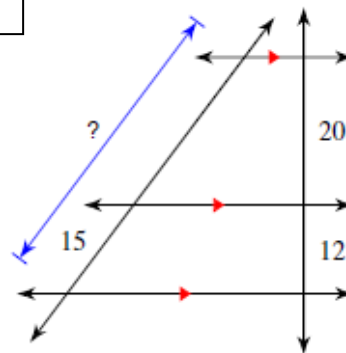


Using transversal proportionality theorem, solve each of the following for the “?”.

4.

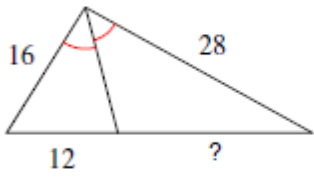


5.

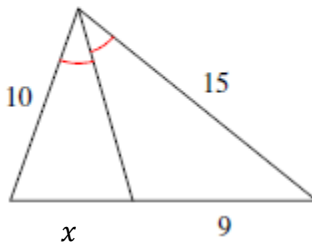


Using the triangle angle bisector theorem, solve the following.

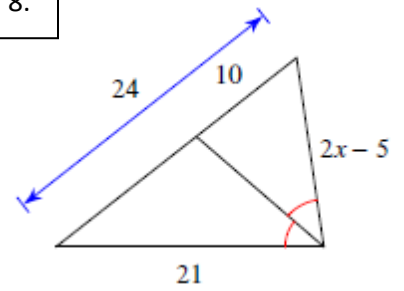
6.



7.



8.



9. On the map below, Idaho Avenue bisects the angle between University Avenue and Walter Street. To the nearest yard, what is the distance along University Avenue from 12th Street to Washington Street?

