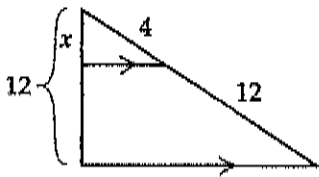


# Overlapping Proportions Do Work on Separate Sheet

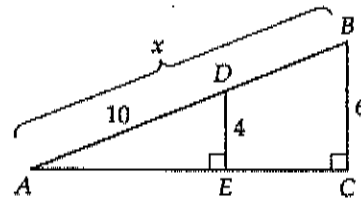
- 1) A vertical rod 10 feet high cast a shadow of 8 feet. At the same time, a tree cast a shadow of 12 feet. How high is the tree?

In each diagram, the line segment within the triangle is parallel to the third side. Find  $x$  in each case.

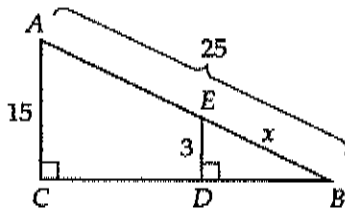
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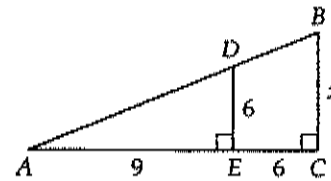
3)



4)



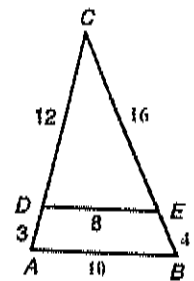
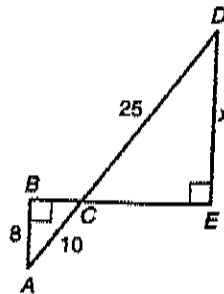
5)



- 6) A person 5 feet tall is standing near a tree. If the length of the person's shadow is 3 feet, and the length of the tree's shadow is 18 feet, what is the height of the tree?

- 7) In the accompanying diagram determine whether  $\triangle ABC \sim \triangle DEC$ ?

- 8) a) If  $\angle ABC$  and  $\angle DEC$  are right, will  $\triangle ABC \sim \triangle DEC$ ?  
b) If  $AB = 8$ ,  $AC = 10$ , and  $DC = 25$ , find  $DE$ .



- 9) If a triangle has sides length 5 and 14, what is the range of possibilities that the third side could be?

- 10) What is the sum of the interior angles of a 16-sided polygon?

- 11) Write in scientific notation:  
382,000,000,000,000

