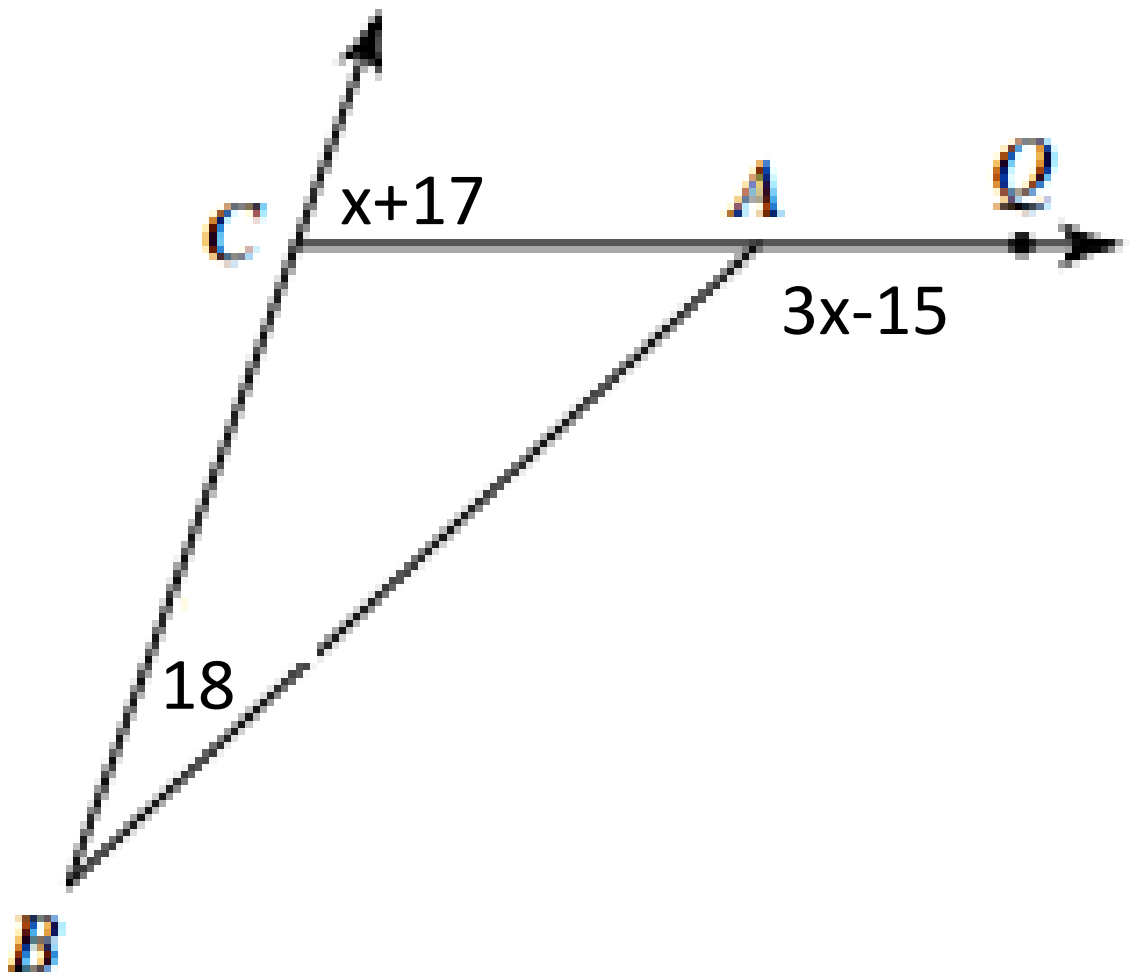
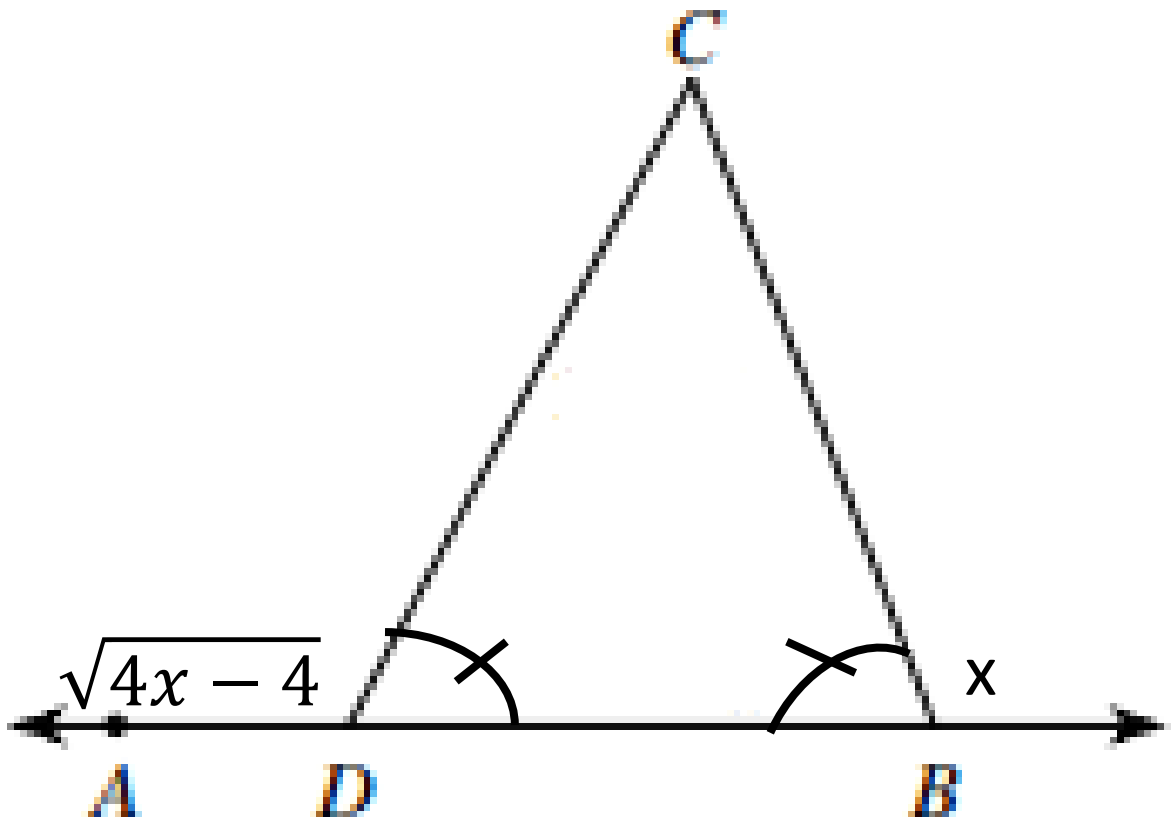
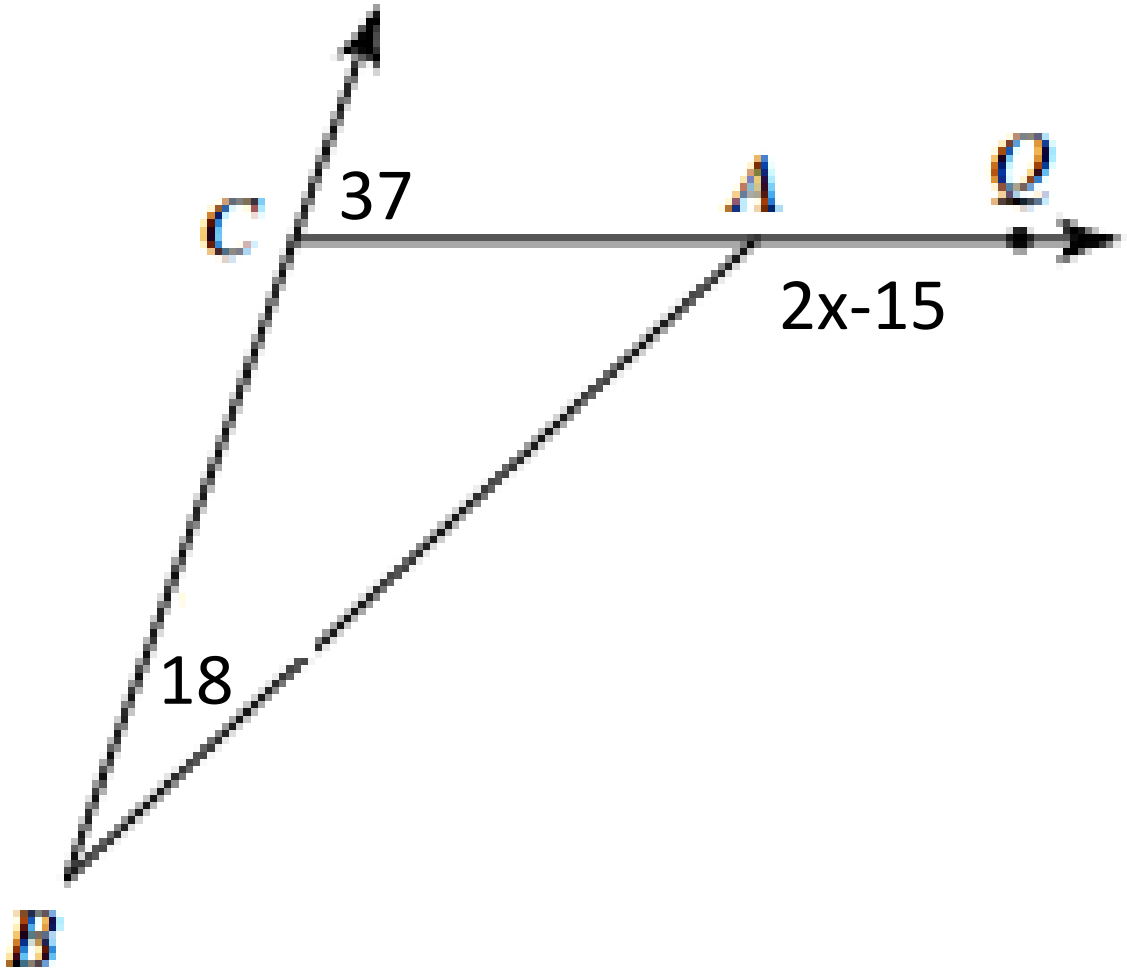
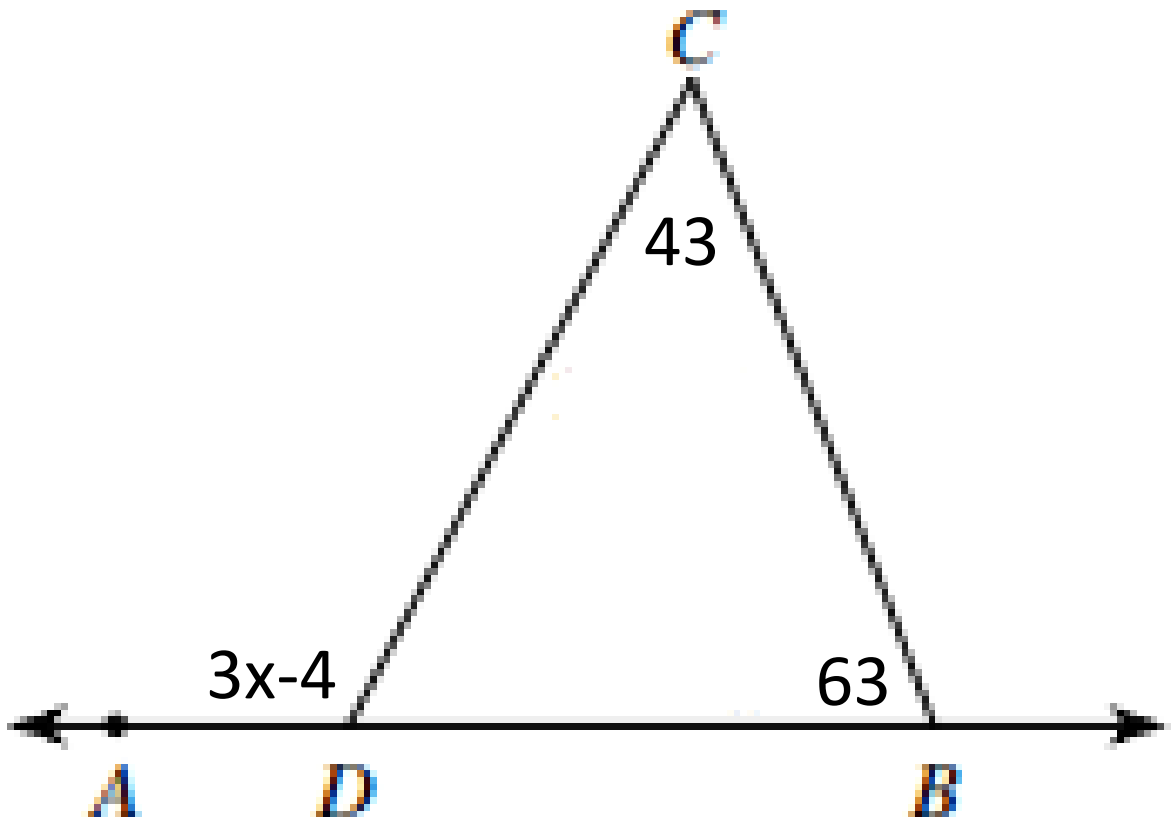
Warm Up – Solve for the value of x.





Warm Up – Solve for the value of x.



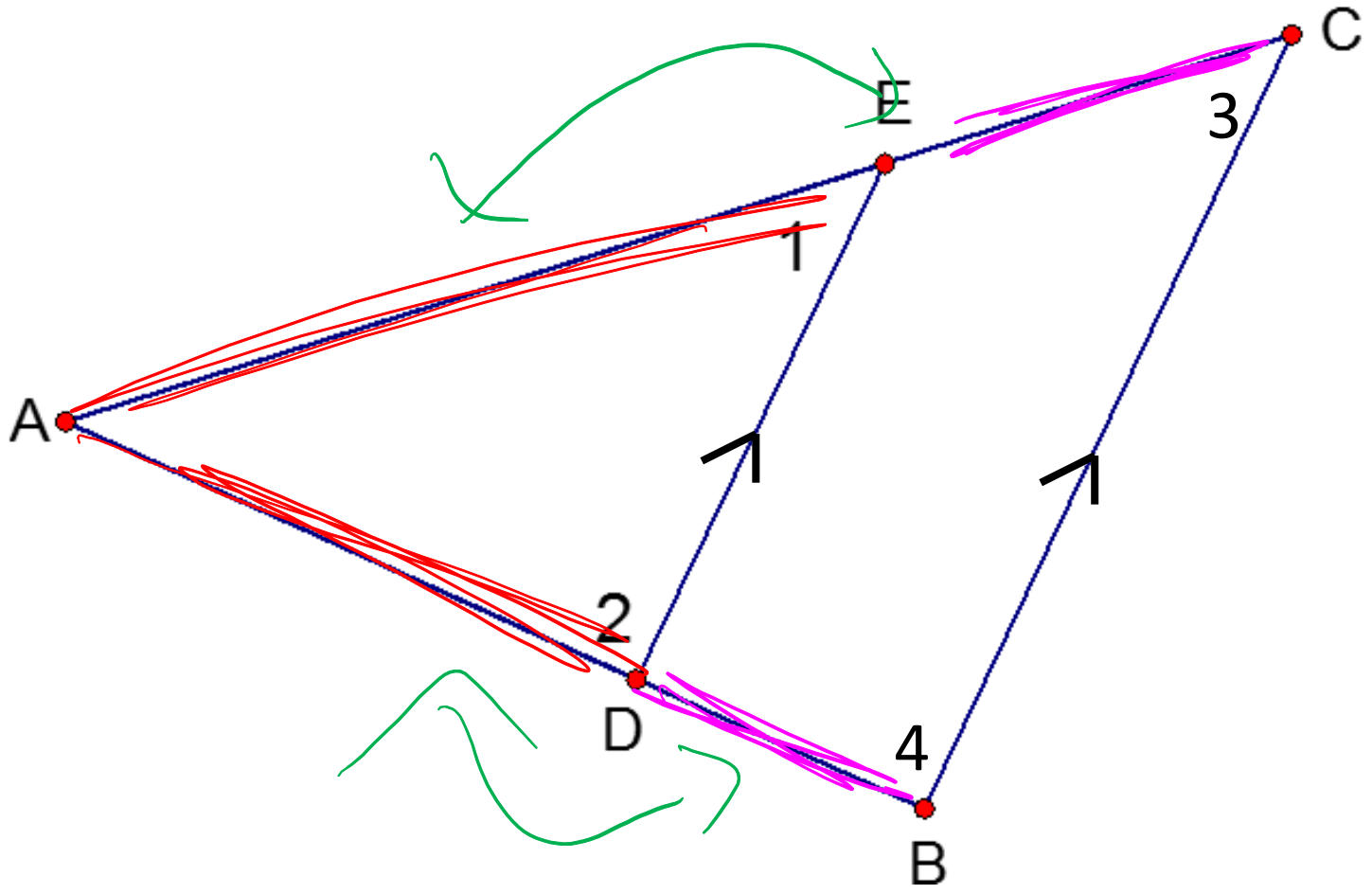


Homework

Triangle proportionality theorem –

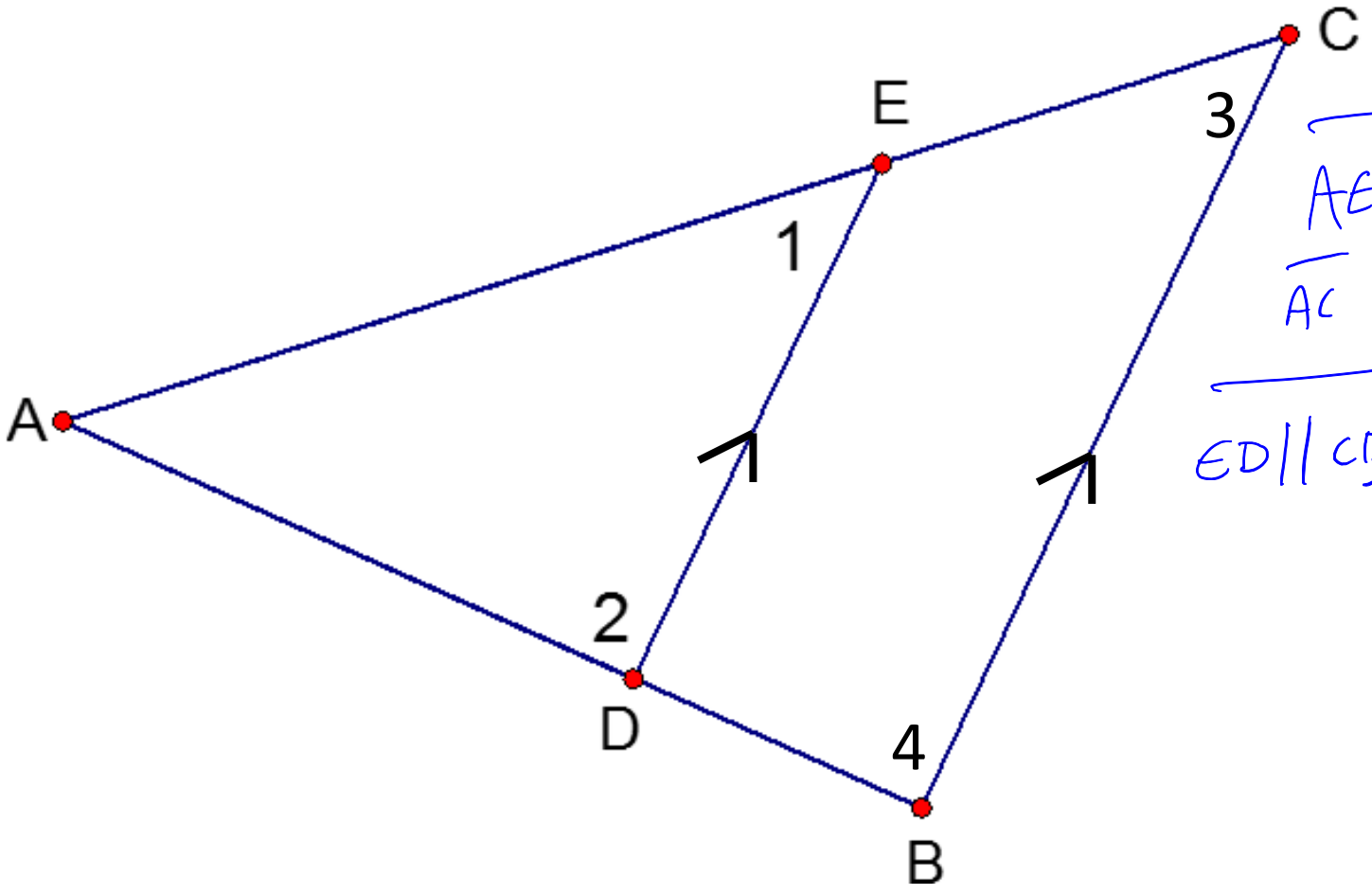
If a line parallel to one side of a triangle intersects the other two sides of the triangle, then the line divides the two sides proportionally.

Example: In the figure, $\overline{DE}$ is parallel to $\overline{BC}$, and intersects $\overline{AC}$ and $\overline{AB}$.



Converse of the triangle proportionality theorem–

If a line divides two sides of a triangle proportionally, then it is parallel to the third side.



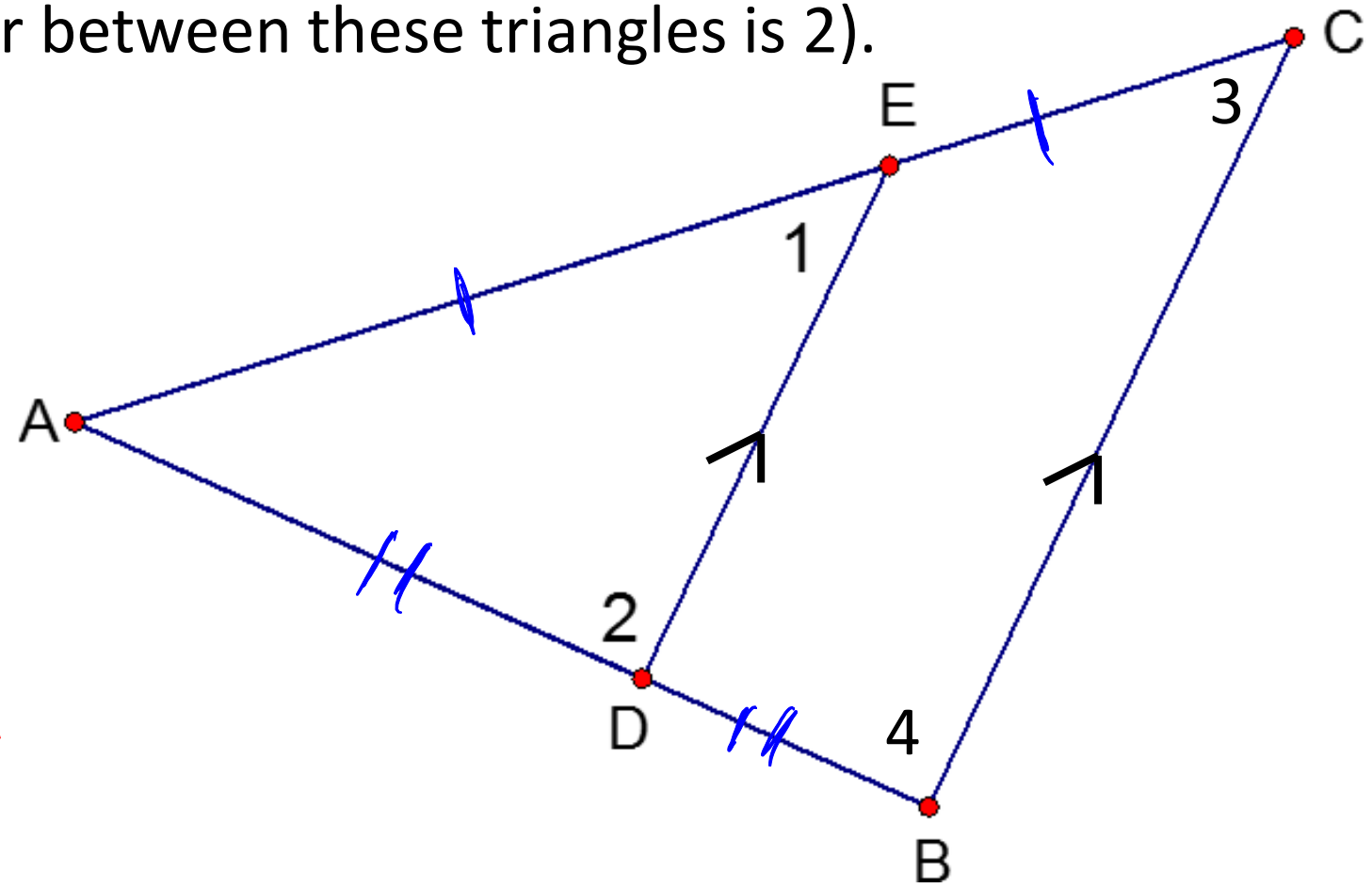
$\frac{AE}{AC} = \frac{AD}{AB} = \frac{ED}{CB}$	Given
$ED \parallel CB$	Conv of D prop thm

Triangle Midsegment Theorem –

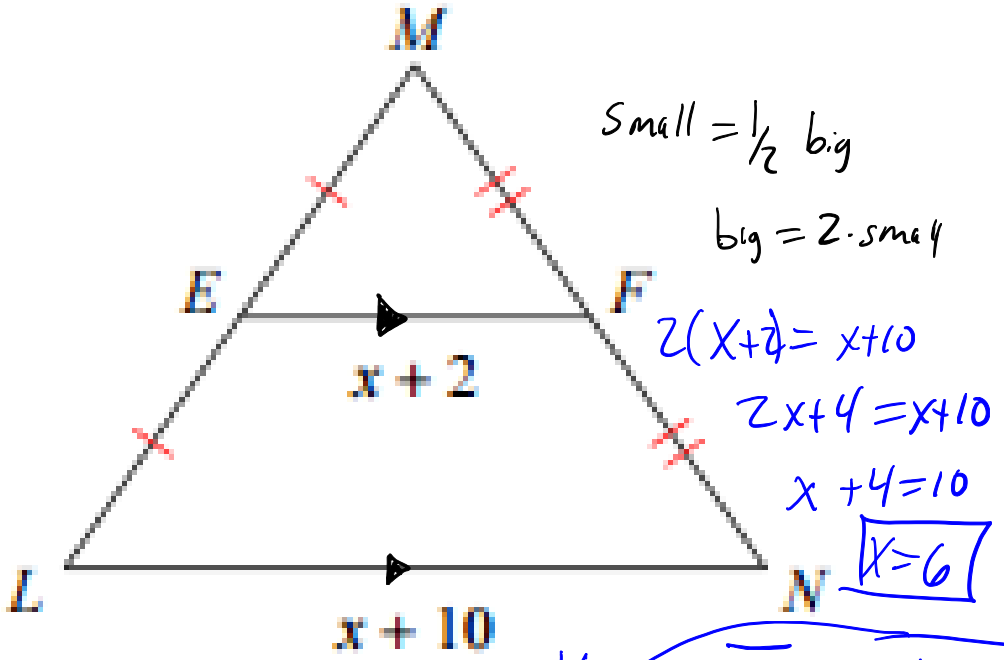
The segment joining the midpoints of any two sides will be parallel to the third side and half its length.

If E and D are the midpoints of $\overline{AC}$ and $\overline{AB}$ respectively, $\overline{ED}$ // $\overline{BC}$, and half its length. (The scale factor between these triangles is 2).

$AE \cong EC$	Given
$AD \cong DB$	
E is midpt of $\overline{AC}$	D is of midpt
D is midpt of $\overline{AB}$	
$ED \parallel BC$	$\triangle$ midsgmt thm
$mED = \frac{1}{2} mBC$	



1. Find LN



Small = ½ big

big = 2 · small

$2(x+2) = x+10$

$2x+4 = x+10$

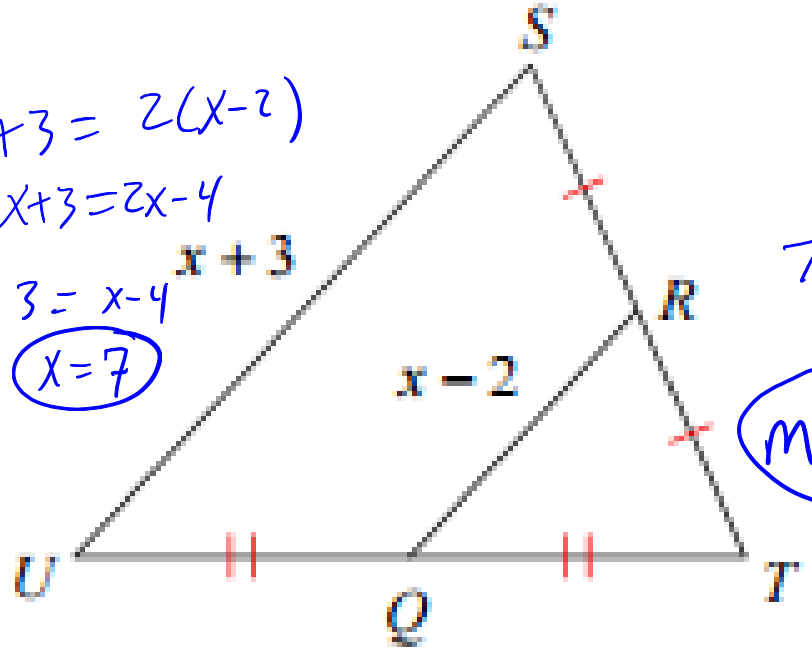
$x+4 = 10$

$\boxed{x=6}$

$6+10 = 16$

$m\overline{LN} = 16$ units

2. Find RQ



$x+3 = 2(x-2)$

$x+3 = 2x-4$

$3 = x-4$

$x = 7$

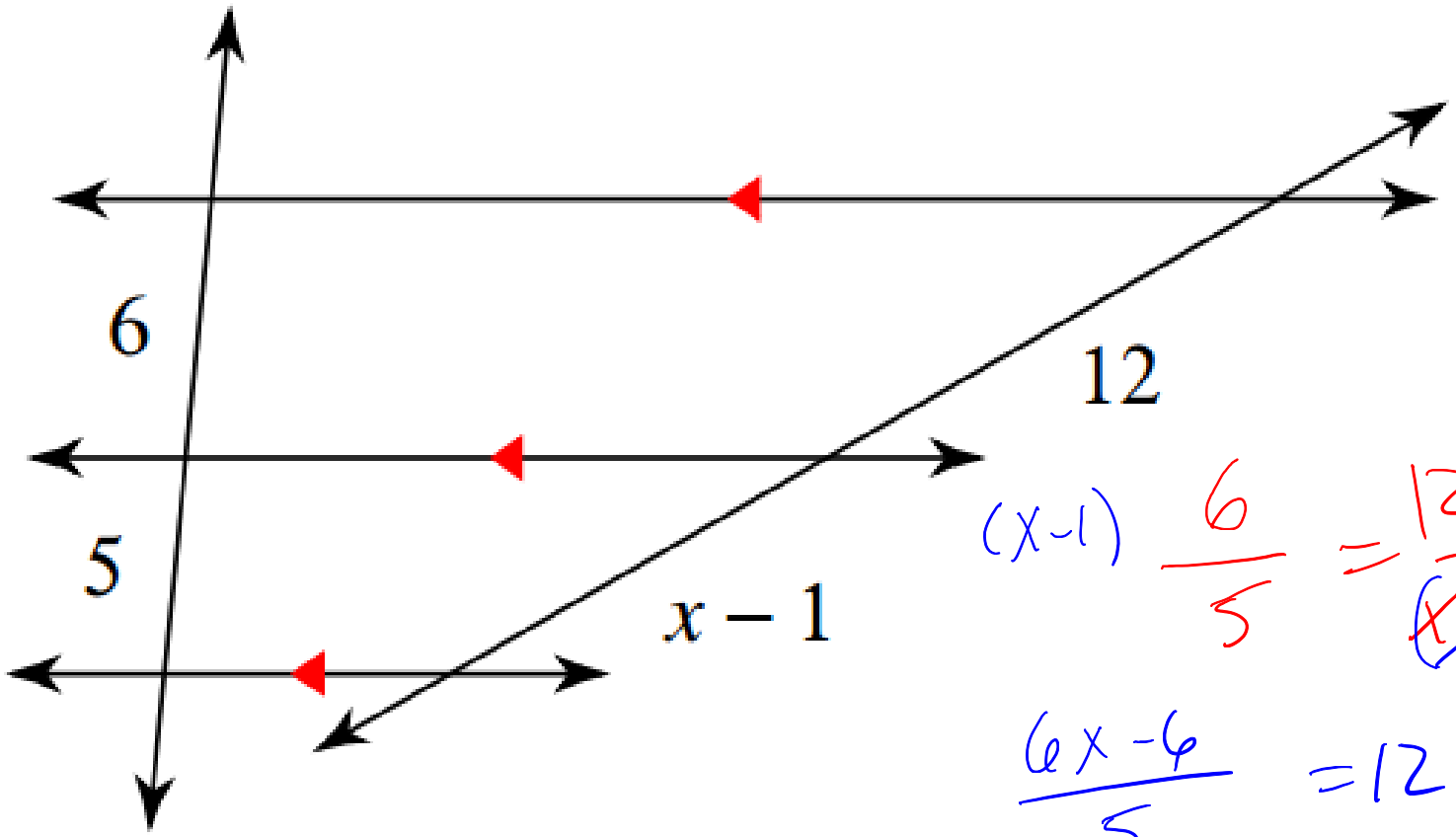
$7-2$

5

$m\overline{RQ} = 5$ units

3. Find the length of “?”

4. Find the length of “?”

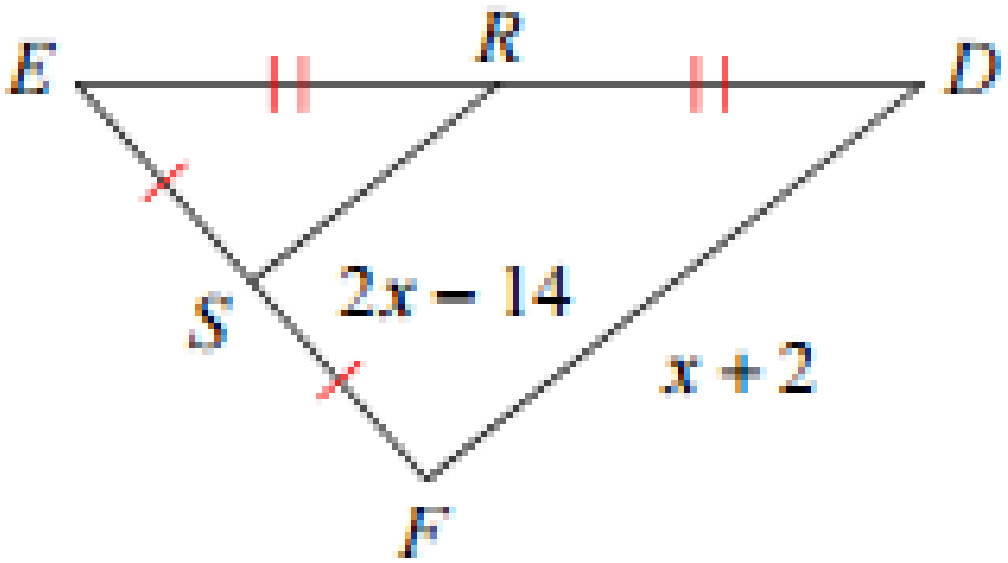


$(x-1)\frac{6}{5} = \frac{12}{\cancel{(x-1)}}\cancel{(x-1)}$

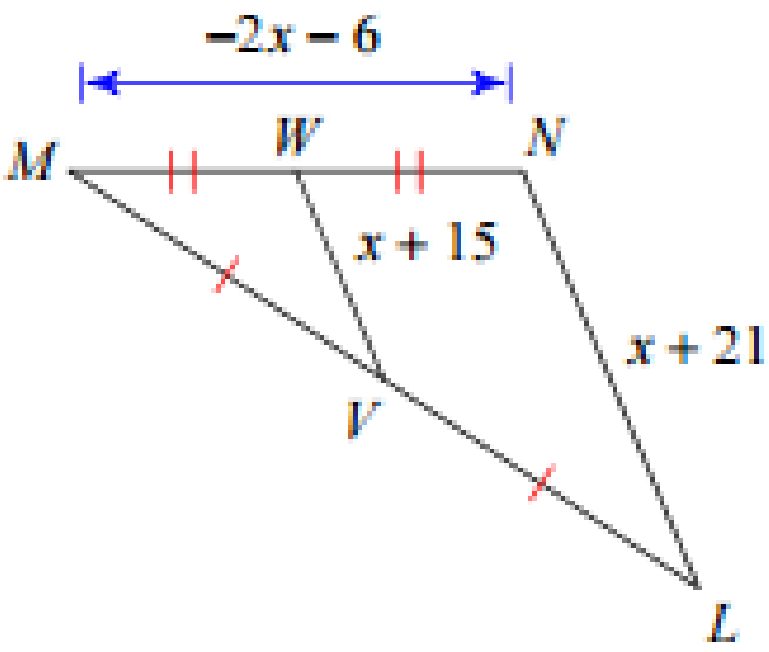
$\frac{6x-6}{5} = 12$ $6x = 66$

$6x-6=60$ $x=11$

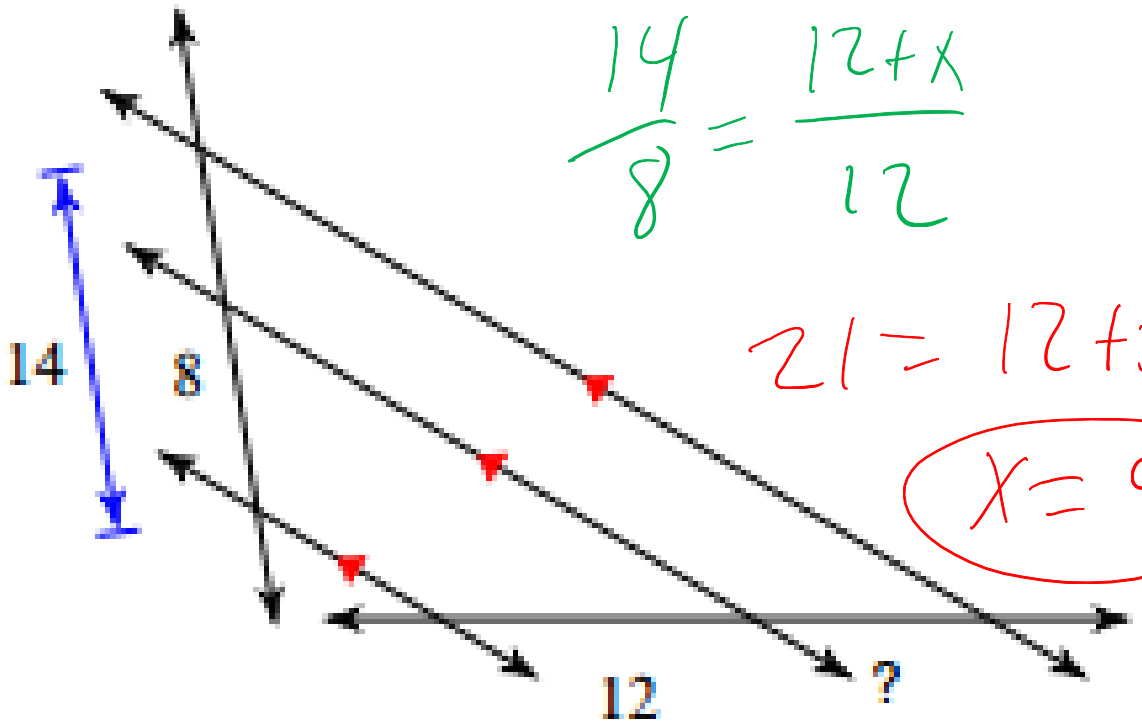
5. Find SR



6. Find VW



7. Find the length of "?"



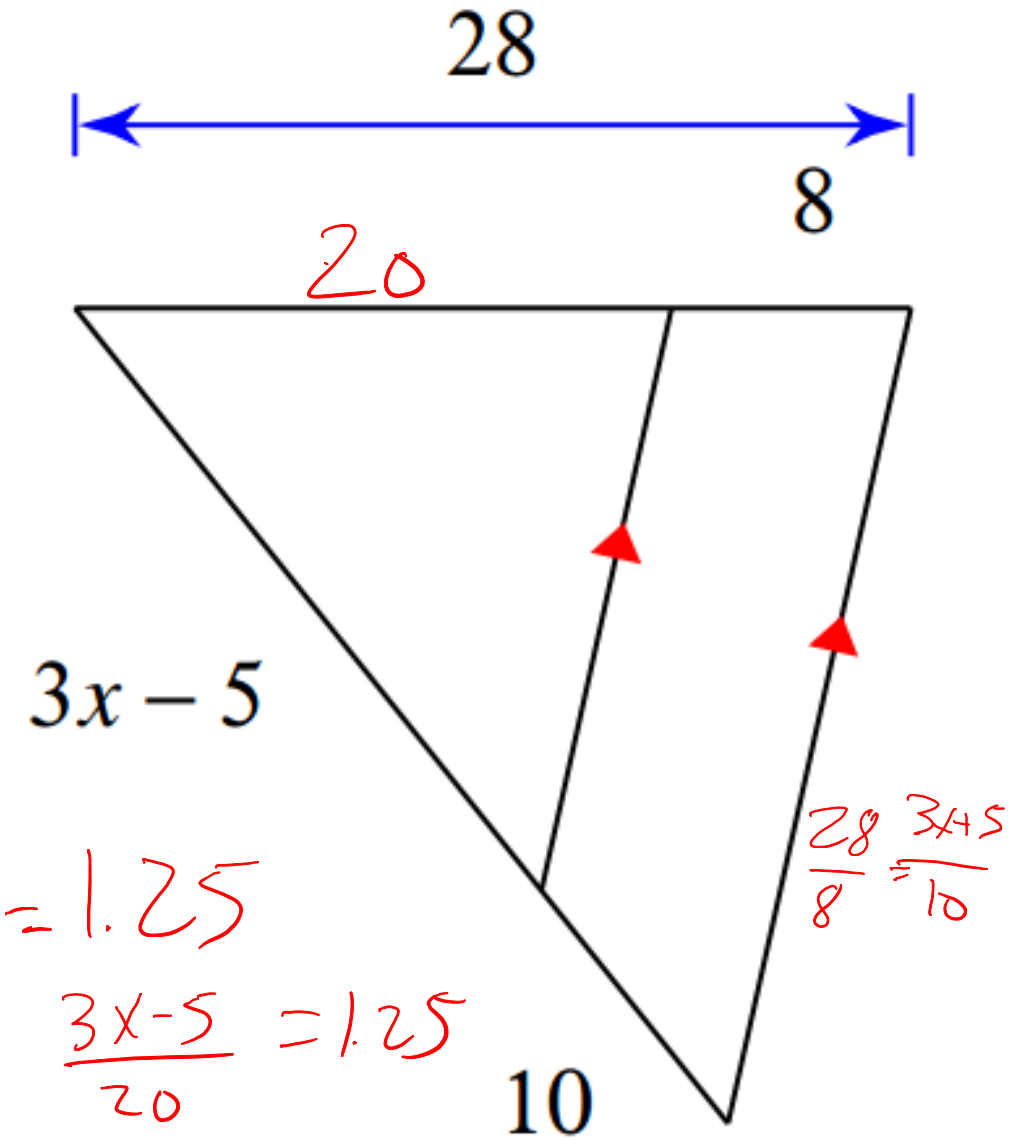
$$\frac{14}{8} = \frac{12+x}{12}$$

$$21 = 12 + x$$

$$x = 9$$

$$\frac{20}{8} = \frac{3x-5}{16}$$

8. Find the length of "?"



$$\frac{28}{8} = \frac{3x+5}{10}$$

$$\frac{10}{8} = 1.25$$

$$\frac{3x-5}{20} = 1.25$$