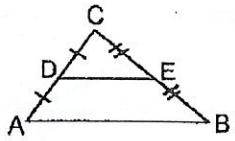
Midsegments of Triangles

Date_____

Midsegment of a Triangle

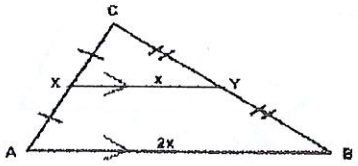
A midsegment of a triangle is a segment joining the midpoints of the two sides of a triangle.



$\overline{DE}$ is a midsegment of ΔABC

Triangle Midsegment:

1. connects the midpoints
2. parallel to one side of a triangle
3. is half the length of the parallel side



$\overline{AB} \parallel \overline{XY}$

$XY = \frac{1}{2}AB$ or $AB = 2(XY)$

Examples

1. Given DE is the length of the midsegment. What is its length?

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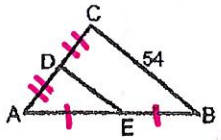
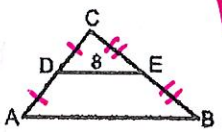


2. Given DE is the length of the midsegment. Find AB.

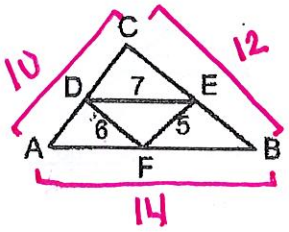
16



3. Given DE, DF, and FE are the lengths of midsegments. Find the perimeter of ΔABC. How does this compare to the perimeter of ΔDEF?

36

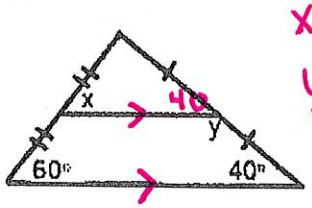
18



4. Solve for x and y.

$x = 60°$

$y = 140°$



5. What is the perimeter of ΔTEN?

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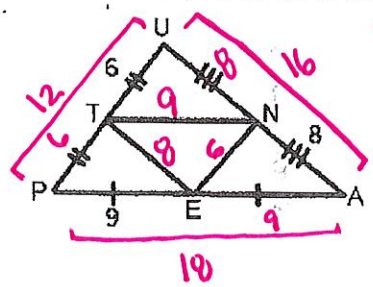
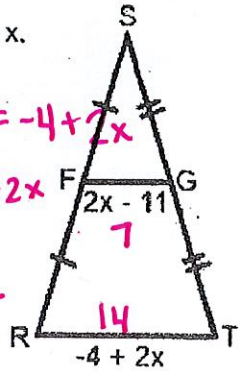


6. Solve for x.



$2(2x-11) = -4+2x$

$4x-22 = -4+2x$

$2x-22 = -4$

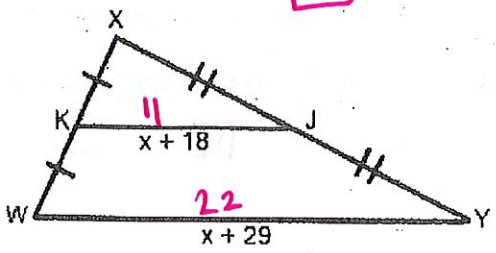
$+22 \quad +22$

$\frac{2}{2}x = \frac{18}{2}$

$x = 9$

7. Find KJ.

11



$2(x+18) = x+29$

$2x+36 = x+29$

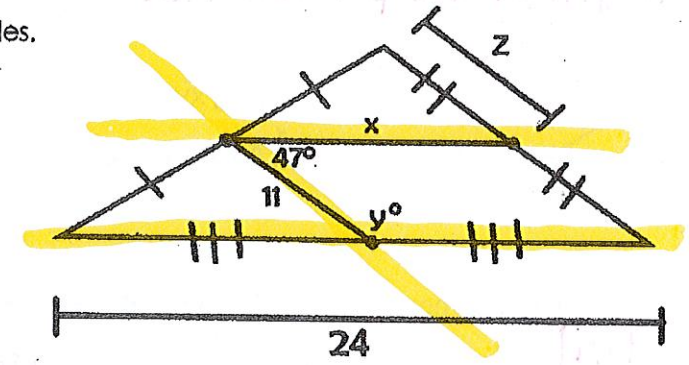
$x = -7$

8. Solve for the missing variables.

x = 12

y = 133°

z = 11



47° and y° are Same Side Interior.

$47+y = 180$