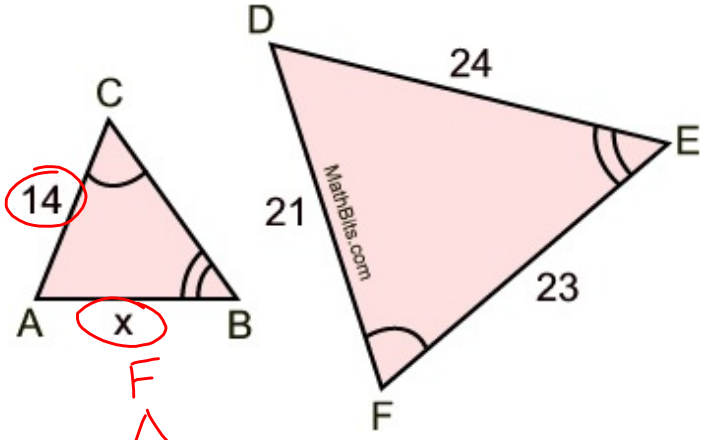
DO NOW $\triangle ABC \sim \triangle DEF$

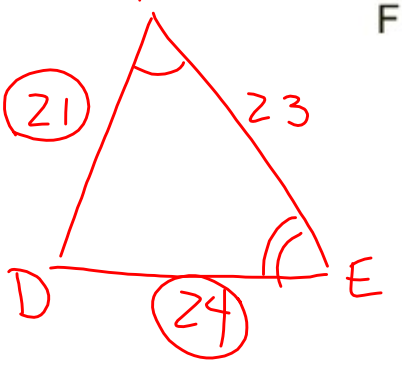
Given the labeled diagrams at the right. Find x.



$\frac{14}{x} = \frac{21}{24}$

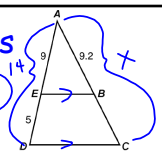
$\frac{21x}{24} = \frac{336}{21}$

$x = 16$



HW Answers

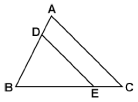
1) C 14.3



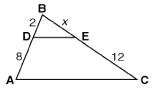
$\frac{9}{14} = \frac{9.2}{x}$

$x = 14.3$

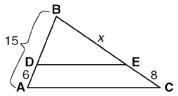
2) 12



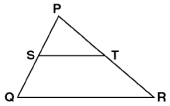
3) 3



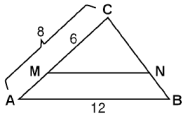
4) 12



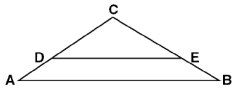
5) 3



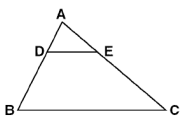
6) 9



7) 15



8) 10



Mid-Segment Theorem

The mid-segment of a triangle joins the midpoints of two sides of a triangle. It is parallel to the third side of the triangle and half the length of the third side of the triangle.

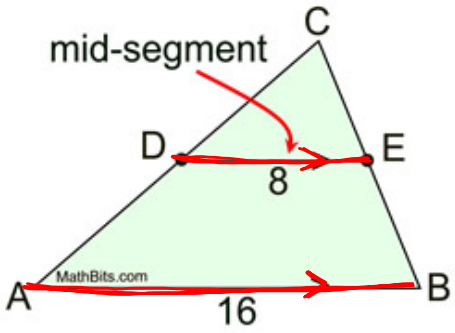
$\overline{DE}$ is a mid-segment

D is midpoint of $\overline{AC}$

E is midpoint of $\overline{CB}$

$\overline{DE} \parallel \overline{AB}$

$DE = \frac{1}{2} AB$

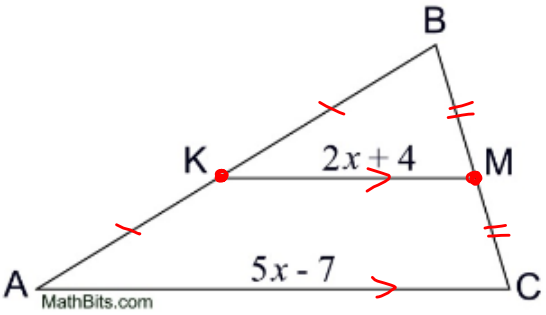


1. $\overline{KM}$ is the mid-segment of ΔABC, as seen at the right.

a. Find x.

b. Find KM = 34

c. Find AC. = 68



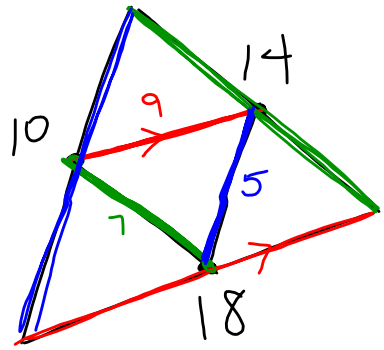
$2(2x+4) = 5x-7$

$4x + 8 = 5x - 7$

$15 = x$

$KM = \frac{1}{2} AC$

2. If a triangle with side lengths of 10, 14 and 18 has the midpoints of all three sides connected by segments, what must be the perimeter of the triangle formed?



$P = 9 + 5 + 7$

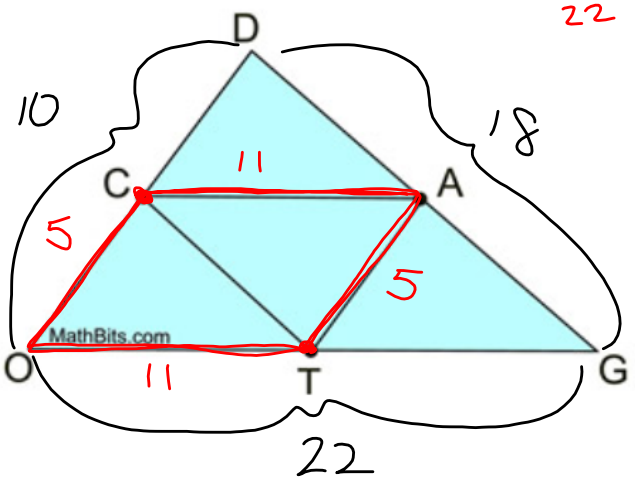
$P = 21$

$P = 10 + 14 + 18$

$P = 42$

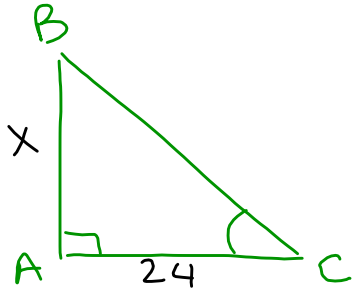
3. *C*, *A* and *T* are midpoints.
DO = 10, *DG* = 18, and *OG* = 22
What is the perimeter of parallelogram *CATO*?

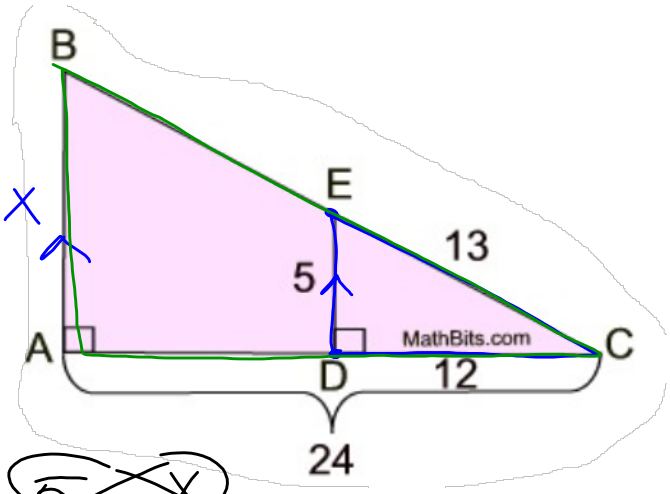
$P = 32$

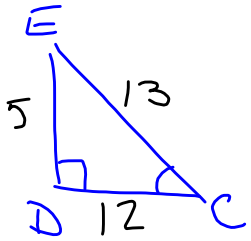


4. Given the diagram below,

Find AB.







$\frac{5}{12} = \frac{x}{24}$

$12x = 120$

$\boxed{x = 10}$

In the following diagram it is known that $\overline{AB} \perp \overline{AC}$ and $\overline{DE} \perp \overline{BC}$. If $BC = 20$, $DE = 4$, and $DC = 8$ then find the length of $\overline{AB}$