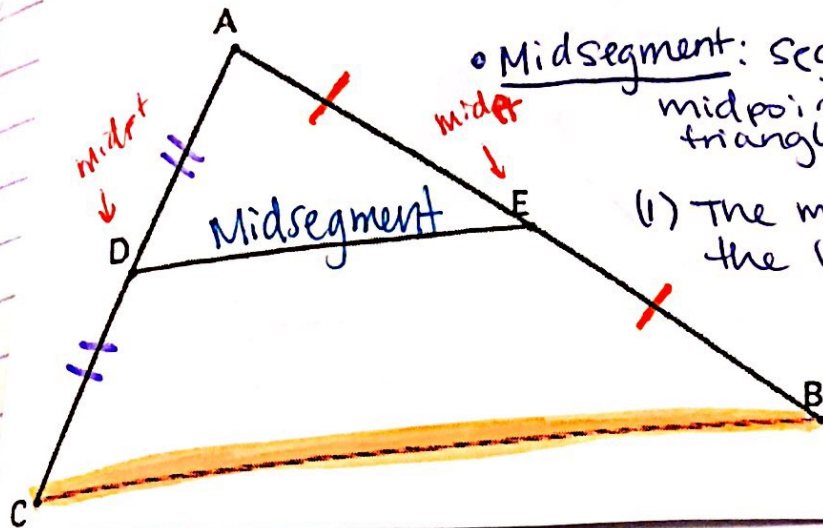


Midsegment Theorem

Midsegment Theorem:



• Midsegment: Segment connecting the midpoints of two sides of a triangle.

(1) The midsegment is half the length of the 3rd side

(2) The midsegment is \parallel to the 3rd side

① If $\overline{DE} = 8$, $\overline{CB} = \underline{16}$ ② If $\overline{CB} = 8$, $\overline{DE} = \underline{4}$

③ If $\overline{AE} = 12$, $\overline{EB} = \underline{12}$ and $\overline{AB} = \underline{24}$

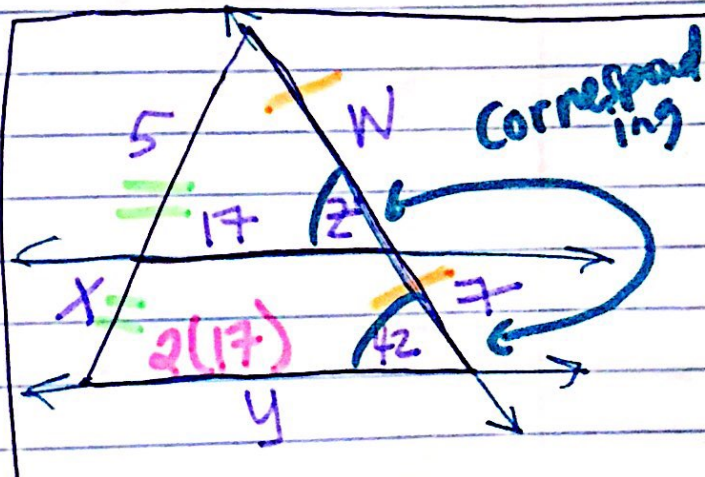
④ If $\overline{CB} = x + 9$ and $\overline{DE} = 5x$, then $x = \underline{1}$

$\overline{DE} = \underline{5}$ and $\overline{CB} = \underline{10}$

$$2(5x) = x + 9$$

$$10x = x + 9$$

$$x = 1$$



$w = 7$ $x = 5$
 $y = 34$ $z = 42$

Theorem

Congruence & Similarity

Quadratic Functions

Quadratic Functions

Radical Functions

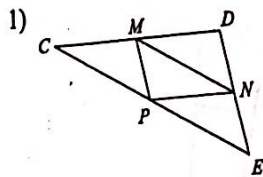
Congruence & Similarity

Midsegment Practice

Midsegment
Practice!

Midsegment of a Triangle

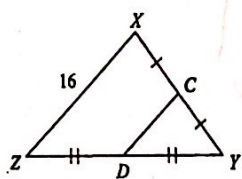
In each triangle, M, N, and P are the midpoints of the sides. Name a segment parallel to the one given.



$\overline{CD} \parallel \overline{PN}$

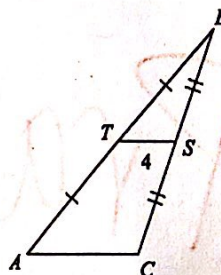
Find the missing length indicated.

3) Find CD



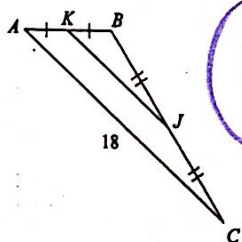
8

4) Find AC



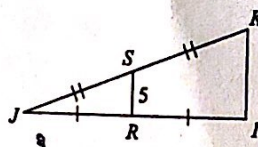
8

5) Find KJ



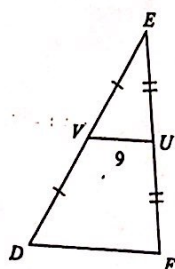
9

6) Find IK



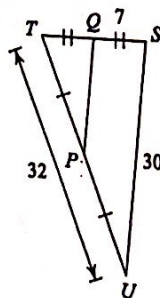
10

7) Find DF



18

8) Find PQ



15

Midpoint Theorem

9) Solve for x.

$2(2x-3) = x+9$
 $4x-6 = x+9$
 $3x = 15$
 $x = 5$

10)

$2(x+19) = x+29$
 $2x+38 = x+29$
 $x = -9$

11)

$2(x+2) = 3x-8$
 $2x+4 = 3x-8$
 $12 = x$

12)

$2(x-3) = x+6$
 $2x-6 = x+6$
 $x = 12$

Find the missing length indicated.

13) Find LN

$2(x+2) = x+10$
 $2x+4 = x+10$
 $x = 6$
 $LN = 16$

14) Find RQ

$2(x-2) = x+3$
 $2x-4 = x+3$
 $x = 7$
 $RQ = 5$

15) Find SR

$2(2x-14) = x+2$
 $4x-28 = x+2$
 $3x = 30$
 $x = 10$
 $SR = 6$

16) Find VW

$2(x+15) = x+21$
 $2x+30 = x+21$
 $x = -9$
 $VW = 6$