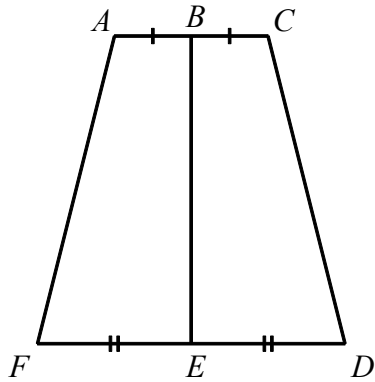
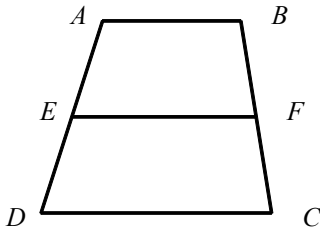


1. \overline{BE} is the perpendicular bisector of \overline{AC} and \overline{FD} . Is \overline{BE} the midsegment of the trapezoid?

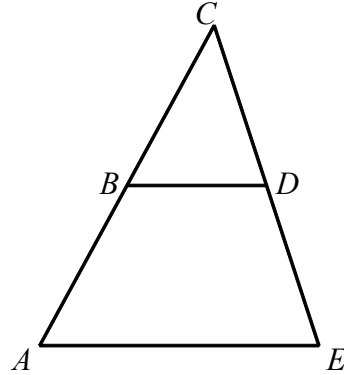


2. What is the ratio of the length of the midsegment of an equilateral triangle to the sum of the triangle's sides?

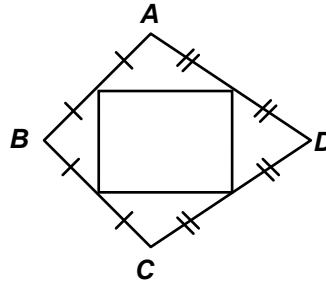
3. Given: Trapezoid $ABCD$ with midsegment \overline{EF} . If $EF = 12$ and $DC = 15$, find AB .



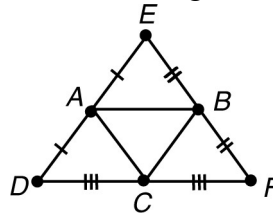
4. Solve for x given $BD = 3x + 2$ and $AE = 4x + 8$. Assume B is the midpoint of \overline{AC} and D is the midpoint of \overline{CE} .



5. Find the area of the rectangle if $AC = 12$ and $BD = 25$.

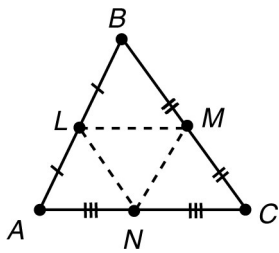


6. Refer to the figure below.



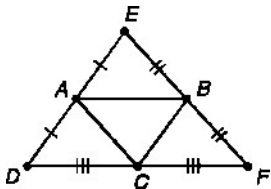
If $EF = 5x + 6$ and $AC = 3x - 2$, then what is the length of \overline{BF} ?

7. Refer to the figure below.



- A. If $BC = 15$, then $LN =$ _____.
 B. If $AB = 3x + 5$ and $NM = 2x + 1$, then $NM =$ _____.

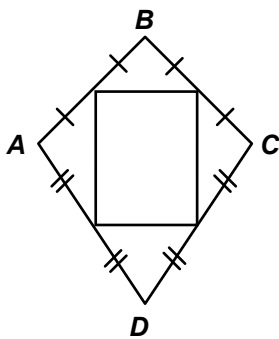
8. For the given triangle, state the relationships between \overline{AB} and \overline{DF} .



9. The coordinates of the midpoints of the sides of a triangle are $L(0, 1)$, $M(4, 0)$, and $N(2, -2)$. Find the coordinates of the vertices of the triangle.

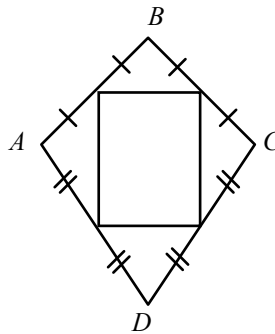
10. The midpoints of the sides of a triangle are $A(4, 5)$, $B(5, 6)$, and $C(6, 2)$. What are the coordinates of the vertices?

11. Find the area of the rectangle if $AC = 13$ and $BD = 21$.



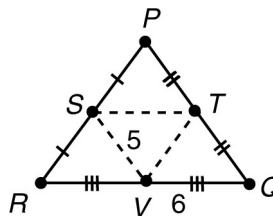
- [A] 68.25 [B] 34 [C] 273 [D] 136.5

12. If $AC = 13$ and $BD = 20$, find the lengths of the midsegments of $\triangle ABC$ and $\triangle ADB$.



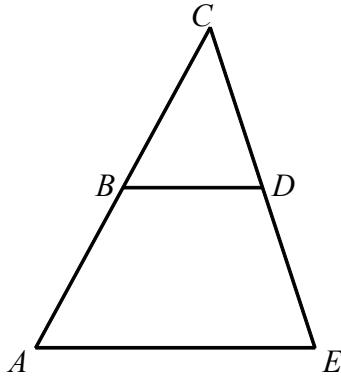
- [A] Midsegment of $\triangle ABC = 40$, midsegment of $\triangle ADB = 26$.
 [B] Midsegment of $\triangle ABC = 26$, midsegment of $\triangle ADB = 40$.
 [C] Midsegment of $\triangle ABC = 10$, midsegment of $\triangle ADB = 6.5$.
 [D] Midsegment of $\triangle ABC = 6.5$, midsegment of $\triangle ADB = 10$.

13. For the triangle shown, $VS = 5$ and $VQ = 6$. Then $PQ =$ _____.



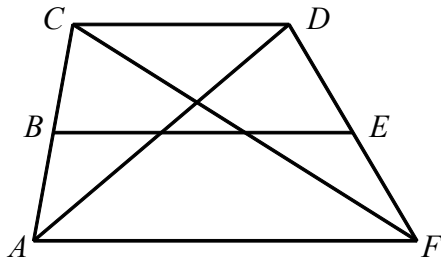
- [A] 11 [B] 5 [C] 10 [D] 12

14. If B is the midpoint of \overline{AC} , D is the midpoint of \overline{CE} , and $BD = 13$, find AE .



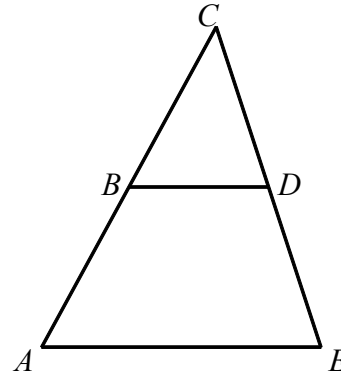
- [A] 39 [B] 169 [C] 13 [D] 26

15. Which is the midsegment of trapezoid $ACDF$? Assume B is the midpoint of \overline{AC} and E is the midpoint of \overline{DF} .



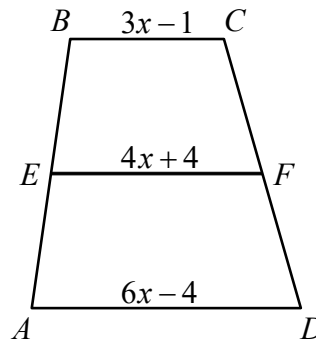
- [A] \overline{CF} [B] \overline{BE}
 [C] \overline{AD} [D] none of these

16. Solve for x given $BD = \frac{7}{2}x + 2$ and $AE = 3x + 8$. Assume B is the midpoint of \overline{AC} and D is the midpoint of \overline{CE} .



- [A] -1 [B] 1 [C] $\frac{7}{4}$ [D] $-\frac{4}{7}$

17. In the figure shown, \overline{EF} is the midsegment of trapezoid $ABCD$. Find x .



- [A] 15 [B] 16 [C] 13 [D] 14

[1] _____

[2] _____

[3] _____

[4] _____

[5] _____

[6] _____

[7] _____

[8] _____

[9] _____

[10] _____

[11] _____

[12] _____

[13] _____

[14] _____

[15] _____

[16] _____

[17] _____

Reference: [3.7.1.47]

[1] No.

Reference: [3.7.1.48]

[2] 1:6

Reference: [3.7.2.51]

[3] 9

Reference: [5.4.1.40]

[4] 2

Reference: [5.4.1.42]

[5] 75

Reference: [5.4.1.44]

[6] 28

Reference: [5.4.1.46]

[7] A. 7.5B. 7

Reference: [5.4.1.47]

[8] $\overline{AB} \parallel \overline{DF}$ and $AB = \frac{1}{2}DF$

Reference: [5.4.2.48]

[9] $(-2, -1), (2, 3), (6, -3)$

Reference: [5.4.2.49]

[10] $(3, 9), (7, 3), (5, 1)$

Reference: [5.4.1.43]

[11] [A]

Reference: [3.7.2.50]

[12] [D]

Reference: [5.4.1.45]

[13] [C]

Reference: [3.7.1.45]

[14] [D]

Reference: [3.7.1.46]

[15] [B]

Reference: [5.4.1.41]

[16] [B]

Reference: [3.7.2.49]

[17] [C]