

Show all work

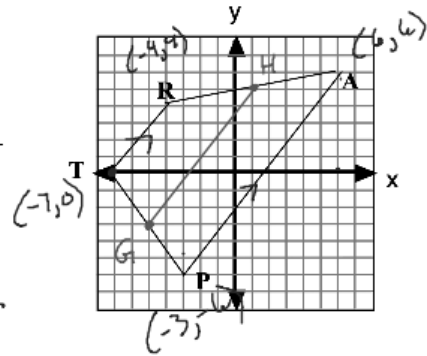
Find the midpoint of the non-parallel sides

Label the midpoints $G(-5, -3)$ & $H(1, 5)$

Draw the midsegment

Use the distance formula to prove the midsegment theorem

$TR =$ _____ $GH =$ _____ $PA =$ _____



Prove \parallel lines

$$\text{Slope } \overline{TR} \quad m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{4 - 0}{-4 - (-7)} = \frac{4}{3}$$

$$\text{Slope } \overline{PA} \quad \frac{6 - (-1)}{6 - (-3)} = \frac{7}{9} = \frac{7}{9}$$

midpoint

$$\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$$\text{midpt } \overline{TP} \quad \left(\frac{-7 + (-3)}{2}, \frac{0 + (-1)}{2} \right) (-5, -0.5)$$

$$\text{midpt } \overline{RA} \quad \left(\frac{6 + (-4)}{2}, \frac{6 + 4}{2} \right) (1, 5)$$

$$\text{Distance} = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

TR

$$TR = \sqrt{(4 - 0)^2 + (-4 - (-7))^2}$$

$$= \sqrt{4^2 + 3^2}$$

$$= \sqrt{16 + 9}$$

$$= \sqrt{25} = 5$$

GH

$$GH = \sqrt{(-5 - 1)^2 + (-3 - 5)^2}$$

$$= \sqrt{(-6)^2 + (-8)^2}$$

$$= \sqrt{36 + 64}$$

$$= \sqrt{100}$$

$$= 10$$

PA

$$PA = \sqrt{(6 - (-3))^2 + (6 - (-1))^2}$$

$$= \sqrt{9^2 + 7^2}$$

$$= \sqrt{81 + 49}$$

$$= \sqrt{130}$$

$$= 11.4$$

$$\frac{5 + 11.4}{2} \approx 8.2$$

$$10 = 10$$

Given Trapezoid ABCD with points A (-2, -3),
B(-4, 1), C(-2, 4), and D(4,6).

Graph the figure

Prove which two sides are parallel *Slope*

Find the midpoint of the non parallel sides and *m:dp t*
label the midpoints X and Y

Draw the midsegment

Use the distance formula to prove the *Distance*
midsegment theorem.

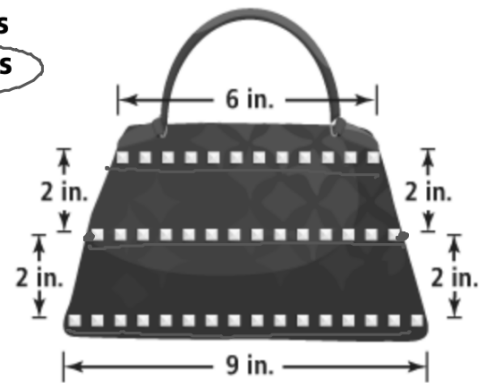
BC = _____ AD = _____ XY = _____

Paxton makes trapezoidal handbags for her friends. She stitches decorative trim along the top, middle, and bottom on both sides of the handbags. How much trim does she need for three handbags? Explain.

SOLUTION

$$\text{mid seg} = \frac{b_1 + b_2}{2}$$

$$\frac{6 + 9}{2} = 7.5 \text{ in}$$



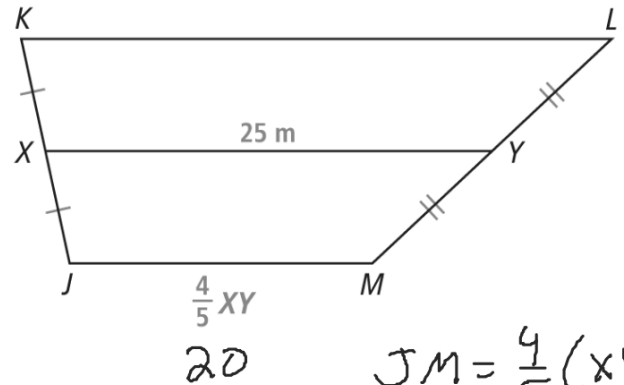
$$12 + 15 + 18$$

$$45$$

$$135 \text{ in}$$

5. Given trapezoid $JKLM$, what is KL ?

Enter your answer.



$$XY = \frac{JM + KL}{2}$$

$$25 = \frac{20 + KL}{2}$$

$$50 = 20 + KL$$

$$KL = 30$$

$$JM = \frac{4}{5}(XY) \\ = \frac{4}{5}(25)$$