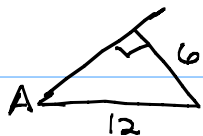
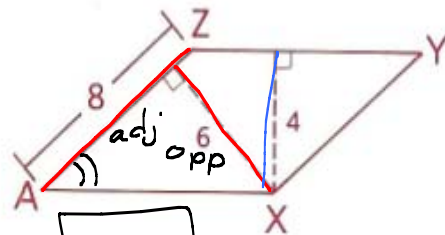


25 a Find  $m\angle A$  in  $\square AXYZ$ .

b Find AX.

a)



$\Rightarrow (6 - 12) \Rightarrow$

30	60	90
x	$x\sqrt{3}$	2x
6	$6\sqrt{3}$	12

Do this first.

$\angle A = 30^\circ$

$\rightarrow$  b)  $A = b \cdot h = 8 \cdot 6 = 48$

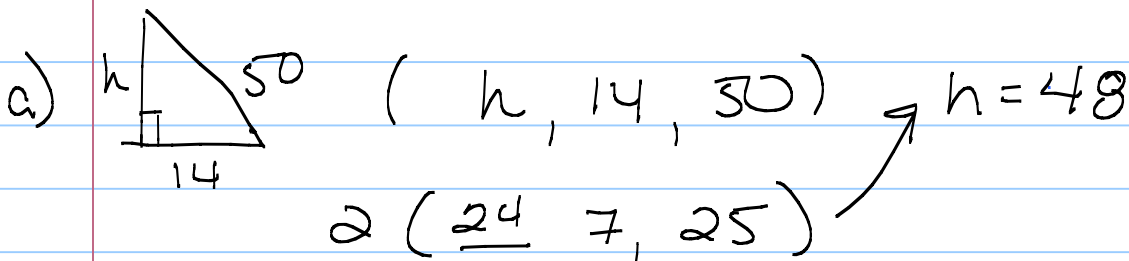
$\frac{48}{4} = (AX) \cdot \frac{4}{4}$

$12 = AX$

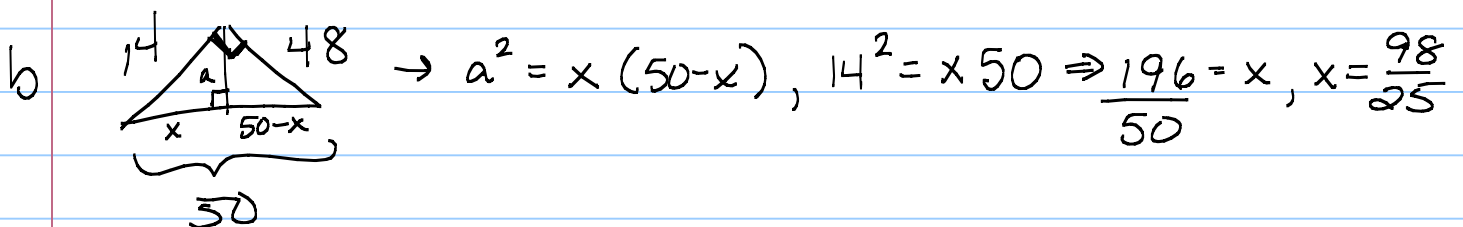
24 The hypotenuse of a right triangle is 50, and one leg is 14.

a Find the area of the triangle.

b Find the altitude to the hypotenuse.



Then  $A = \frac{1}{2} (14)(48) = 7(40+8) = 280+56 = 336$



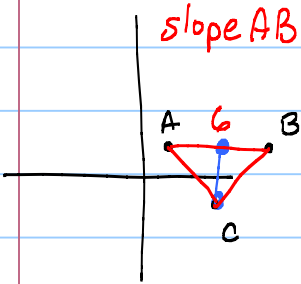
$$a^2 = \frac{98}{25} \left( 50 - \frac{98}{25} \right)$$

$$a^2 = \frac{98}{25} \left( \frac{1152}{25} \right) =$$

$$a = \frac{\sqrt{98 \cdot 1152}}{\sqrt{25^2}} = \frac{336}{25} \text{ or } 13 \frac{11}{25}$$

23 Find the area of  $\triangle ABC$  with vertices  $A = (1, 3)$ ,  $B = (7, 3)$ , and  $C = (4, -1)$ .

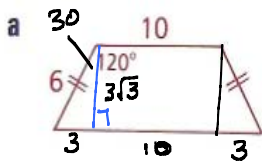
slope  $AB = 0$ , slope  $AC = \frac{3+1}{1-4} = -\frac{4}{3}$ , slope  $BC = \frac{3+1}{7-4} = \frac{4}{3}$  not rt  $\triangle$



$$A_{ABC} = \frac{1}{2} b \cdot h$$

$$\frac{1}{2} (6) (4) = 12$$

22 Find the area of each trapezoid by dividing it into other figures (rectangles and triangles or parallelograms and triangles).

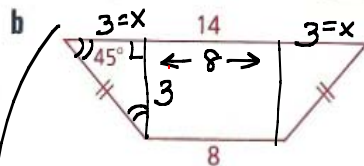


$$A = M \cdot h$$

$$\left( \frac{16+10}{2} \right) 3\sqrt{3}$$

$$13 \cdot 3\sqrt{3}$$

$$39\sqrt{3}$$



$$A = M \cdot h$$

$$\left( \frac{8+14}{2} \right) \cdot 3$$

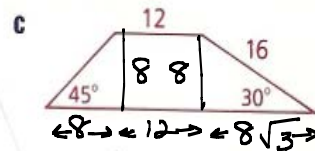
$$11 \cdot 3$$

$$33$$

$$14 = 8 + 2x$$

$$6 = 2x$$

$$3 = x$$



$$\leftarrow 8 \rightarrow \leftarrow 12 \rightarrow \leftarrow 8\sqrt{3} \rightarrow = 20 + 8\sqrt{3}$$

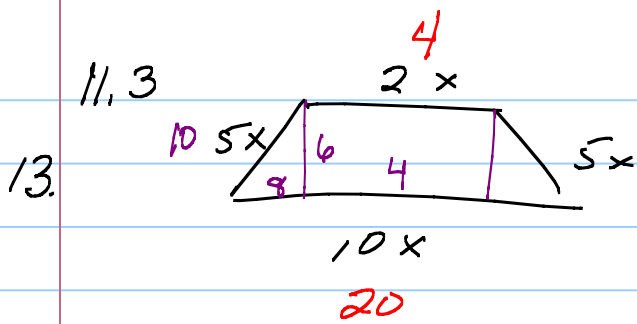
$$A = M \cdot h$$

$$\left( \frac{12+20+8\sqrt{3}}{2} \right) \cdot 8$$

$$\frac{32+8\sqrt{3}}{2} \cdot 8$$

$$4(32+8\sqrt{3})$$

$$128 + 32\sqrt{3}$$



$$22x = 44$$

$$x = 2$$

$$M = \frac{24}{2} = 12$$

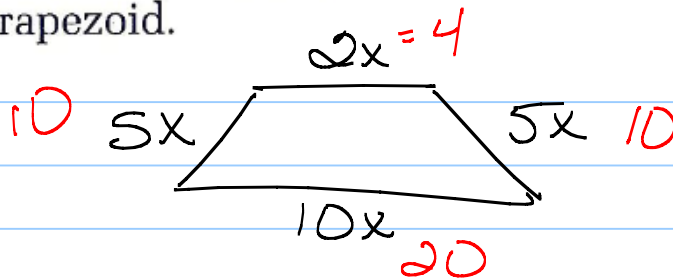
$$A = M \cdot h$$
$$= 12 \cdot 6 = \boxed{72}$$

~~Q&A~~ ~~07~~  
(none)

4/19

11.3:

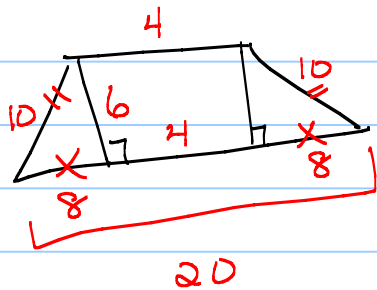
13 The consecutive sides of an isosceles trapezoid are in the ratio 2:5:10:5, and the trapezoid's perimeter is 44. Find the area of the trapezoid. ↗ "x"



$$22x = 44$$

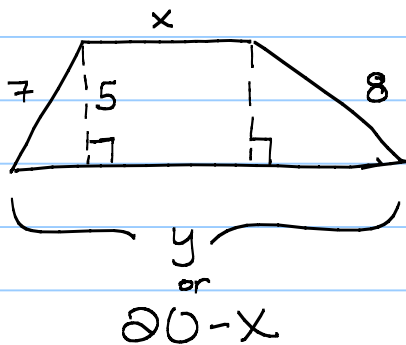
$$x = 2 \rightarrow \text{sides}$$

$$\text{Midline} = \left( \frac{4 + 20}{2} \right) = 12$$



$$A = M \cdot h$$
$$12 \cdot 6 = 72$$

- 12 The perimeter of a trapezoid is 35. The nonparallel sides are 7 and 8. Find the trapezoid's area if its height is 5.



then lower base =  $y$

$$15 + x + y = 35$$

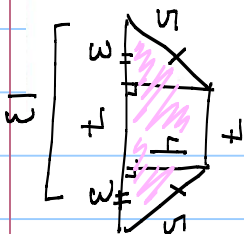
$$y = 20 - x$$

$$\begin{aligned} \text{then } A &= M \cdot h \\ &= 10 \cdot 5 \\ &= 50 \end{aligned}$$

↑ final answer

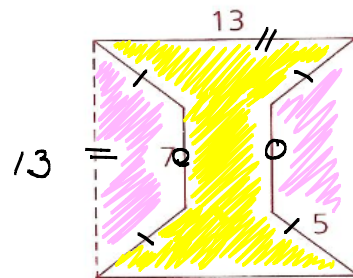
$$M = \frac{b_1 + b_2}{2} = \frac{x + 20 - x}{2} = \frac{20}{2} = 10$$

- 11 Find the area of the figure shown, which was formed by cutting two identical isosceles trapezoids out of a square.



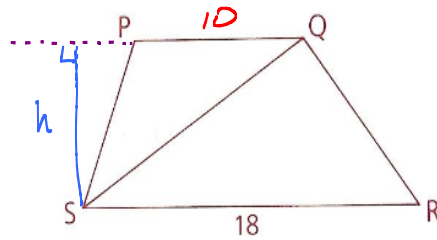
$$13^2 - 2 \left( \frac{7+13}{2} \right) (4)$$

$$169 - 80 = 89$$



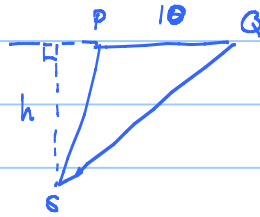
- 10 The area of triangle PQS is 25.  
The median of trapezoid PQRS is 14.  
Base  $\overline{RS}$  measures 18.

- Find: **a** The length of base  $\overline{PQ}$   
**b** The height to base  $\overline{PQ}$  of  $\triangle PQS$   
**c** The height of trapezoid PQRS  
**d** The area of trapezoid PQRS



a.  $M_{PQRS} = 14 \Rightarrow \frac{PQ + SR}{2} = 14 \Rightarrow \frac{PQ + 18}{2} = 14 \Rightarrow PQ + 18 = 28 \Rightarrow PQ = 10$

b)  $A_{PQS} = 25$   
c)



$$25 = \frac{1}{2} \cdot 10 \cdot h$$

$$50 = 10 \cdot h$$

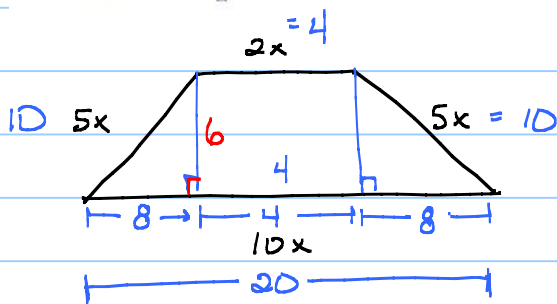
$$5 = h$$

d)  $A_{PQRS} = M \cdot h \rightarrow 14(5) = 70$

11.2 → no questions

11.3:

13 The consecutive sides of an isosceles trapezoid are in the ratio 2:5:10:5, and the trapezoid's perimeter is 44. Find the area of the trapezoid.



$$22x = 44$$

$$x = 2$$

2(345)

$$\Sigma \text{ parts: } \text{rect } 4(6) = 24$$

$$1\Delta = \frac{1}{2} 6 \cdot 8 \quad \text{but } 2 \cong \Delta \rightarrow 6 \cdot 8 = 48$$

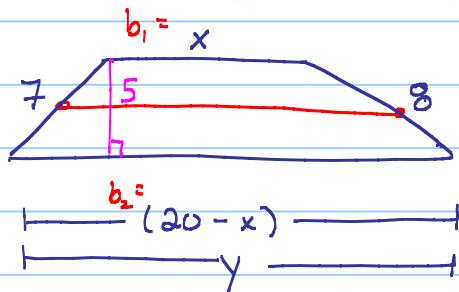
$$A_{\text{trap}} = 24 + 48 = 72$$

$$A = M \cdot h$$

$$12 \cdot 6 = 72$$

$$M = \frac{(4+20)}{2} = 12$$

12 The perimeter of a trapezoid is 35. The nonparallel sides are 7 and 8. Find the trapezoid's area if its height is 5.



$$\text{Then } \begin{array}{r} 15+x+y = 35 \\ -15-x \quad -15-x \end{array}$$

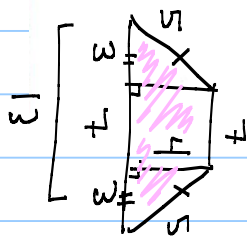
$$y = 20-x$$

$$A = M \cdot h \quad \text{where } M = \frac{b_1 + b_2}{2} = \frac{x + 20 - x}{2} = 10$$

$$= 10 \cdot 5$$

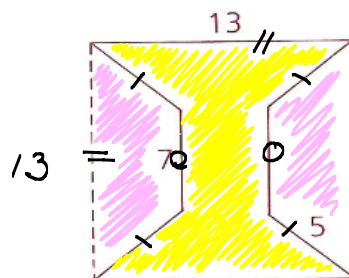
$$= 50$$

- 11 Find the area of the figure shown, which was formed by cutting two identical isosceles trapezoids out of a square.

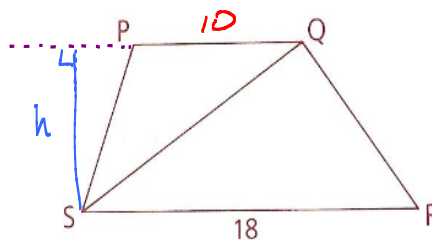


$$13^2 - 2 \left( \frac{7+13}{2} \right) (4)$$

$$169 - 80 = 89$$

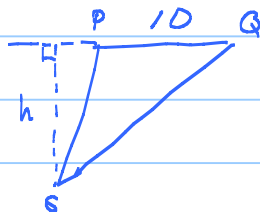


- 10 The area of triangle PQS is 25.  
The median of trapezoid PQRS is 14.  
Base  $\overline{RS}$  measures 18.  
Find: a The length of base  $\overline{PQ}$   
b The height to base  $\overline{PQ}$  of  $\triangle PQS$   
c The height of trapezoid PQRS  
d The area of trapezoid PQRS



a.  $M_{PQRS} = 14$  then  $\frac{PQ+SR}{2} = 14 \Rightarrow \frac{PQ+18}{2} = 14 \Rightarrow PQ+18=28 \Rightarrow PQ=10$

b)  $A_{PQS} = 25$



$$25 = \frac{1}{2} \cdot 10 \cdot h$$

$$50 = 10 \cdot h$$

$$5 = h$$

c) height trap = height  $\triangle \therefore h = 5$

d)  $A_{PQRS} = M \cdot h \rightarrow 14(5) = 70$



