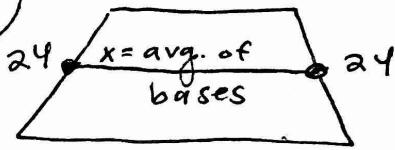


HM3 - Trapezoids

①



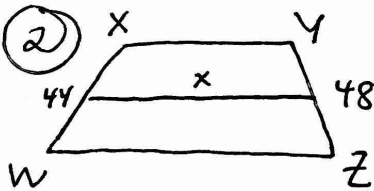
$P = 150 \rightarrow 150 - 48 = 102$ units left to be divided amongst bases

$$x = \frac{1}{2} (\text{top base} + \text{bottom base})$$

$$x = \frac{1}{2} (102)$$

$$x = 51 \text{ units}$$

②



$x = \text{avg. of bases}$

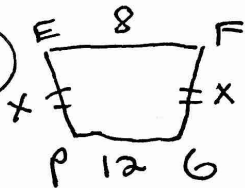
$$44 + 48 + 2x = 200$$

$$2x + 92 = 200$$

$$2x = 108$$

$$x = 54 \text{ cm}$$

③



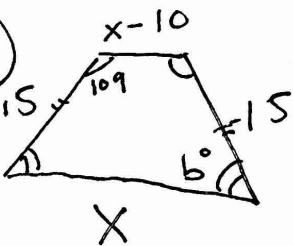
$$18 + 12 + 2x = 48$$

$$30 + 2x = 48$$

$$2x = 18$$

$$x = 9 \text{ units}$$

④



Perimeter = 110 inches

$$x - 10 + x + 15 + 15 = 110$$

$$2x + 20 = 110$$

$$2x = 90$$

$x = 45 \rightarrow$ length of shorter base:

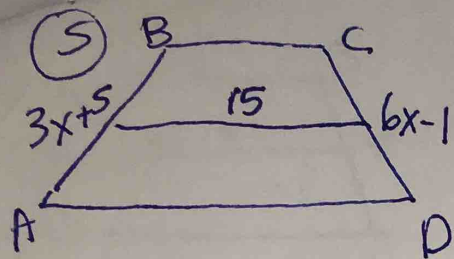
$$35 \text{ in}$$

$$109 + 109 + b + b = 360$$

$$218 + 2b = 360$$

$$2b = 142$$

$$b = 71^\circ$$



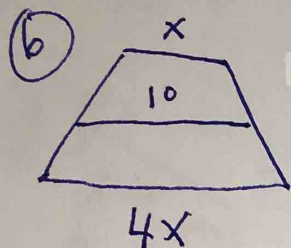
$$P = 52$$

its an isosceles \triangle so we can just set legs = to each other!

$$3x+5 = 6x-1$$

$$6 = 3x$$

$$x = 2$$

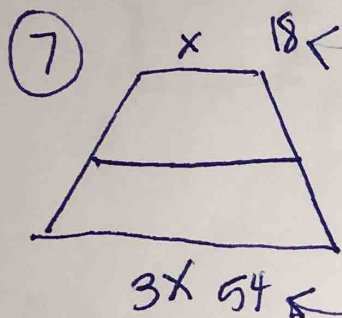


$$\text{median} = \frac{1}{2}(\text{base} + \text{base})$$

$$10 = \frac{1}{2}(x + 4x)$$

$$20 = 5x \quad x = 4$$

bases are 4 units, 16 units



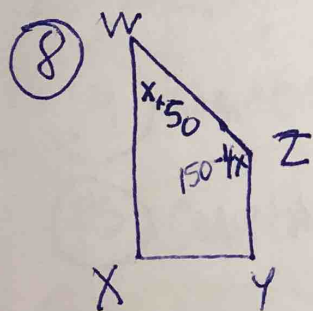
$$x + 3x = 72$$

$$4x = 72$$

$$x = 18$$

$$\text{median} = \frac{1}{2}(18 + 54)$$

$$36 \text{ cm}$$



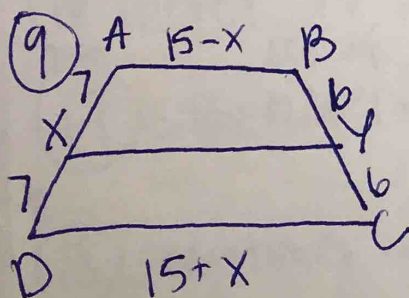
consecutive \angle 's are supplementary

$$x + 50 + 150 + 4x = 180$$

$$200 - 3x = 180$$

$$-3x = -20$$

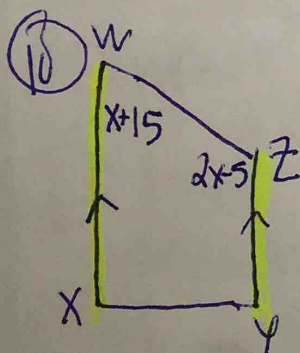
$$x = \frac{20}{3}$$



$$\text{median} = \frac{1}{2}(\text{base} + \text{base})$$

$$\text{median} = \frac{1}{2}(15-x + 15+x) = \frac{1}{2}(30)$$

$$15 \text{ units}$$



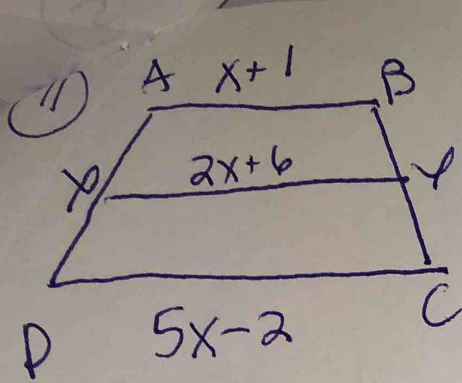
consecutive \angle 's are supplementary

$$x + 15 + 2x + 5 = 180$$

$$3x + 20 = 180$$

$$3x = 160$$

$$x = \frac{160}{3}$$

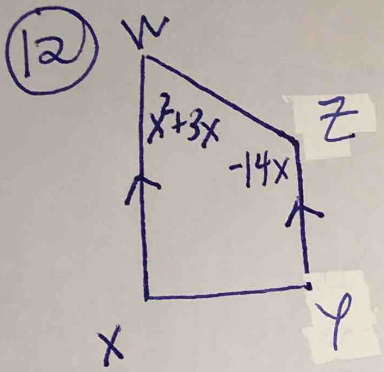


$$2x+6 = \frac{1}{2}(x+1) + 5x-2$$

$$4x+12 = 6x-1$$

$$13 = 2x$$

$$x = 13/2$$



$$x^2+3x-14x = 180$$

$$x^2-11x-180 = 0$$

$$(x-20)(x+9) = 0$$

$$x = 20$$

$$x = -9$$

makes Z negative! we can't have negative Δ s... until next unit!

⑬ always

⑳ always

⑭ sometimes

㉑ always

⑮ sometimes

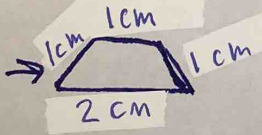
㉒ sometimes

⑯ never \rightarrow a trapezoid has exactly 1 set of parallel sides

㉓ sometimes \rightarrow it could be that a leg is \cong to a base

⑰ sometimes \rightarrow in isosceles trapezoids they are not

㉔ always

⑱ sometimes \rightarrow 

㉕ always
if a leg is \cong to both bases (it'll look like a rhombus!)

⑲ never \rightarrow can't make only 1 set of \parallel sides

⑳ never \rightarrow by definition a trapezoid has exactly 1 pair of \parallel sides