Sec 11.2
pgs. 520 - 522
#13 - 16,
18 - 20, 21ac, 22c, 23, 25,
26, 32

#13 A triangle has the same area as a 6 x 8 rectangle. ↙ 48
The base of the triangle is 8. Find the altitude

$A = \frac{bh}{2}$

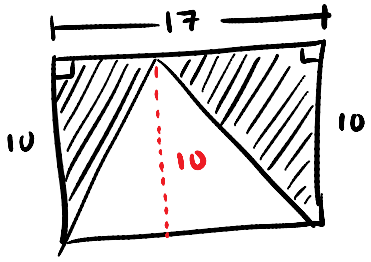
$48 = \frac{8 \cdot h}{2}$

$96 = 8h$

$\boxed{h = 12}$

#14 $\frac{16 \cdot 10}{2} = \boxed{80\ mm^2}$ ← all Δ's have same area

#15 Find area of the shaded region

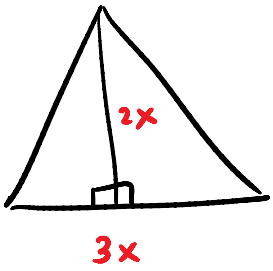


$A_{\square} = 170$

$A_{\Delta} = \frac{17 \cdot 10}{2} = 85$

$A_{shad} = 170 - 85 = \boxed{85}$

#16 In a triangle, a base and its altitude are in a ratio of 3:2. The triangles area is 48. Find the base and the altitude



$\frac{3x \cdot 2x}{2} = 48$

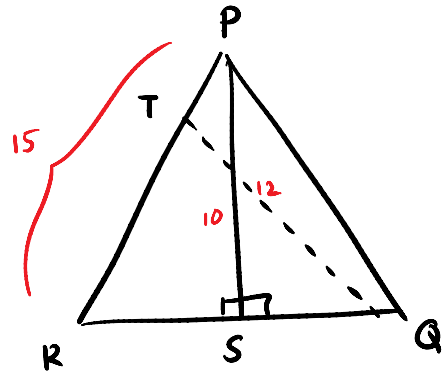
$6x^2 = 96$

$x = 16$

$x = \pm 4$

base: 12
alt: 8

#18 Given: QT = 12
PR = 15
PS = 10



Find: a. area of ΔPQR

$A = \frac{15 \cdot 12}{2}$

$= \frac{180}{2}$

$= 90$

b. Find RQ. $A = \frac{bh}{2}$

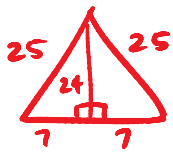
$90 = \frac{RQ \cdot 10}{2}$

$180 = RQ \cdot 10$

$\boxed{18 = RQ}$

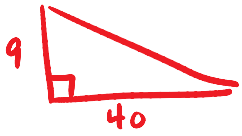
#19

a. Find the area of a triangle whose sides are 25, 25, and 14.



$A = \frac{(14)(24)}{2} = \boxed{168}$

b. Find the area of a right triangle whose legs are 9 and 40.



$A = \frac{40 \cdot 9}{2} = \boxed{180}$

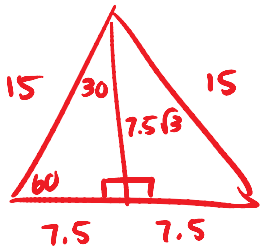
c. Find the area of an isosceles triangle with hypotenuse 18

$x\sqrt{2} = 18$

$x = 9\sqrt{2}$

$A = \frac{9\sqrt{2} \cdot 9\sqrt{2}}{2} = \boxed{81}$

#20 Find the area of an equilateral triangle with perimeter of 45 m.

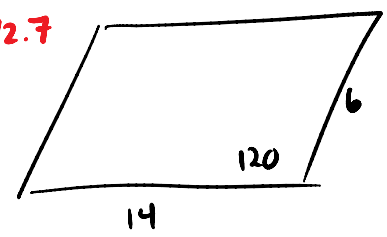


$A = \frac{15 \cdot 7.5\sqrt{3}}{2}$

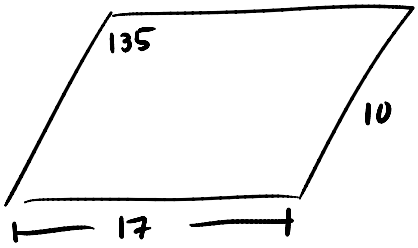
$= \frac{112.5\sqrt{3}}{2} = \boxed{\frac{225\sqrt{3}}{4}}$

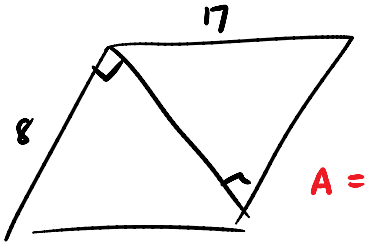
#21 Find Area

$A \approx 72.7$



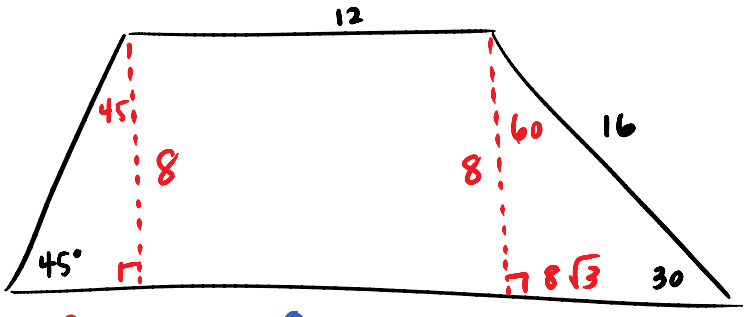
$A \approx 120.2$





$A = 120$

#22 C.



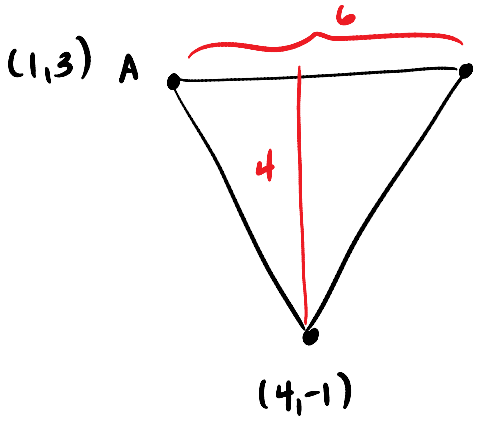
$A = \frac{8 \cdot 8}{2} = 32$

$A = 8 \cdot 12 = 96$

$A = \frac{8 \cdot 8\sqrt{3}}{2} = \frac{64\sqrt{3}}{2} = 32\sqrt{3}$

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

#23 Find the area of ΔABC

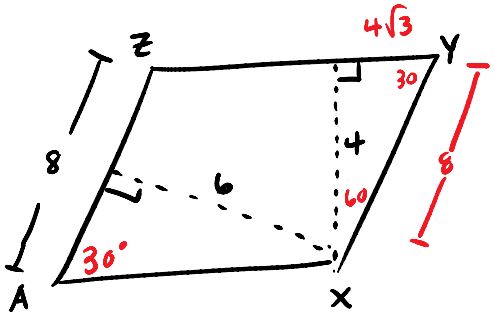


$A = \frac{1}{2}(6)(4)$

$= 12$

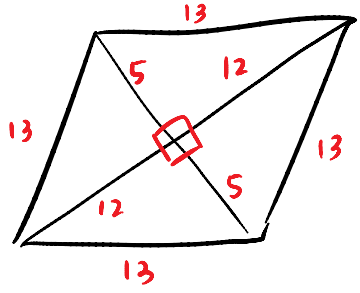
#25 a. Find $m\angle A$ in $\square AXYZ$

$\angle A = 30$



b. Find AX 12

#26 The diagonals of a rhombus are 10 and 24. Find the area and perimeter of the rhombus

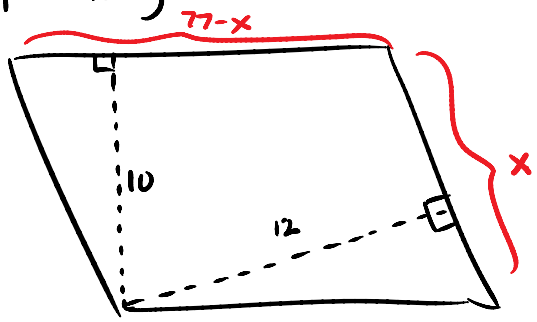


$P = 13(4) = 52$

$A_{\Delta} = \frac{1}{2}(5)(12) = 30$

$A_{rhom} = 30(4) = 120$

#32 The perimeter of the parallelogram is 154. Find the parallelograms area.



$P = 154$

semi $P = 77$

$x \cdot 12 = A$

$(77-x) \cdot 10 = A$

$12x = 10(77-x)$

$12x = 770 - 10x$

$22x = 770$

$x = 35$

$A = bh$

$= 35 \cdot 12$

$= \boxed{420}$