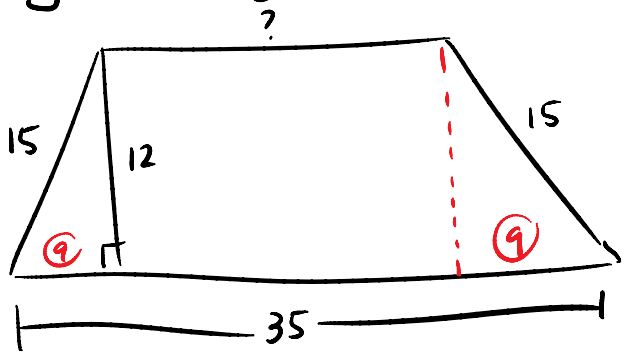
Sec 9.6
pgs. 401 - 404
#5, 8 - 10, 12, 15, 16, 22

#5

a. 12
b. $2\sqrt{7}$
c. 10
d. .5
e. 34
f. $5\sqrt{7}$
g $12\sqrt{7}$
h. 45
i. $12\sqrt{7}$

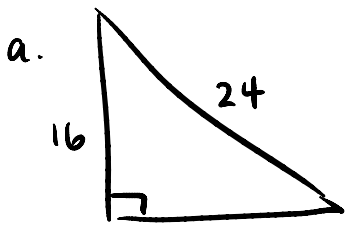
#8. Find the length of the upper base of the isos. trap



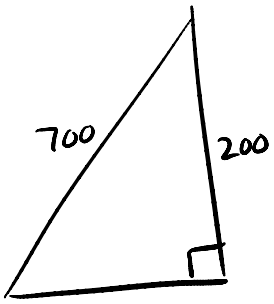
$35 - 9 - 9 = \boxed{17}$

#9 Use the reduced triangle principle to find the missing side

a.

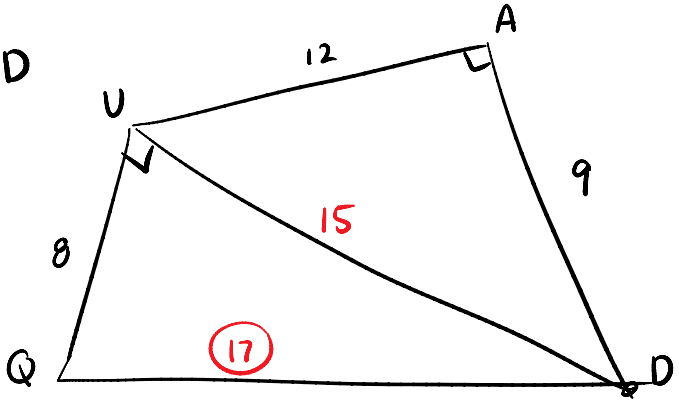


$16^2 + b^2 = 24^2$ (÷8)
$2^2 + b^2 = 3^2$
$4 + b^2 = 9$
$b^2 = 5$
$b = \sqrt{5}$
$\boxed{8\sqrt{5}}$



$200^2 + b^2 = 700^2$ (÷100)
$2^2 + b^2 = 7^2$
$4 + b^2 = 49$
$b^2 = 45$
$b = 3\sqrt{5}$
$\boxed{300\sqrt{5}}$

#10 Find QD

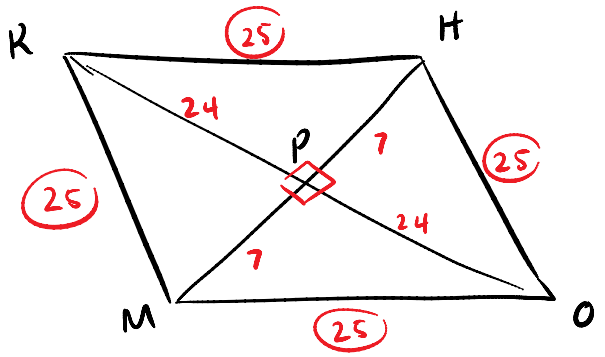


#12 RHOM is a rhombus w/ diagonals

RO = 48

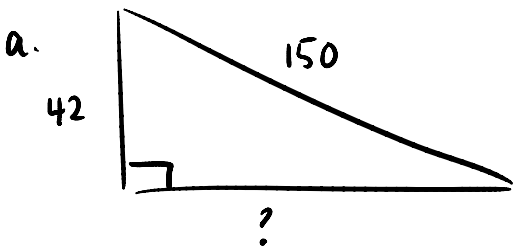
HM = 14

P = 100



#15 Find the missing side of each triangle

a.



$42^2 + b^2 = 150^2$ (÷6)

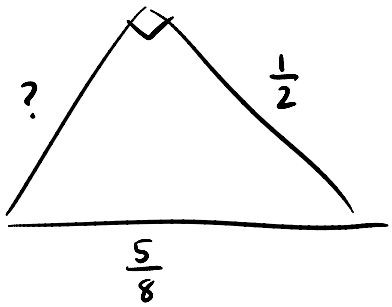
$7^2 + b^2 = 25^2$

$b = 24$

× 6

144

(7, 24, 25)



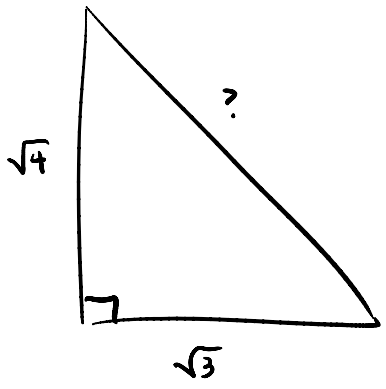
$a^2 + \left(\frac{1}{2}\right)^2 = \left(\frac{5}{8}\right)^2$ (×8)

$a^2 + (4)^2 = 5^2$

$a = 3 \div 8$

3/8

(3, 4, 5)



$(\sqrt{3})^2 + (\sqrt{4})^2 = c^2$

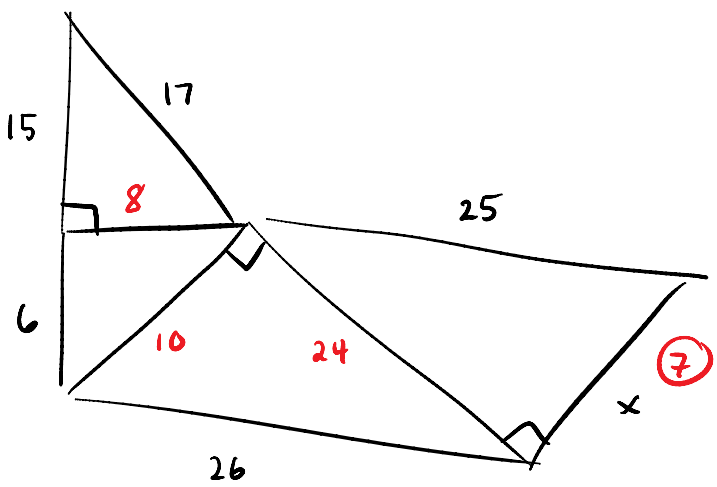
$3 + 4 = c^2$

$7 = c$

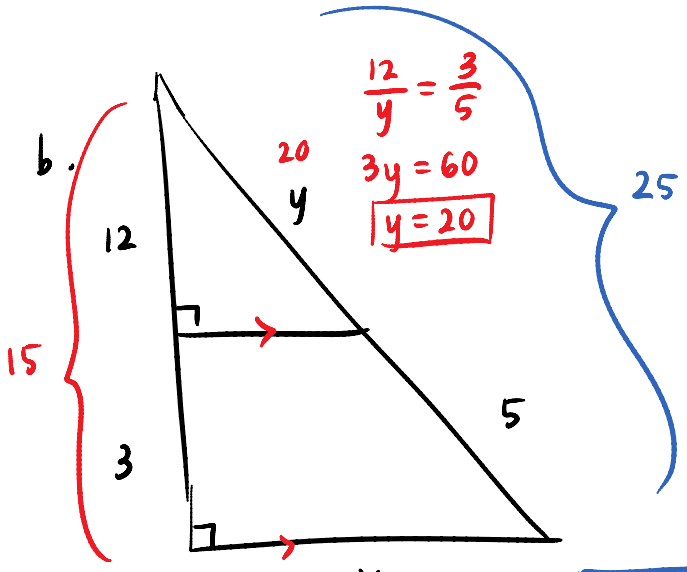
$\sqrt{7} = c$

#16 Find x

a.



b.



$\frac{12}{y} = \frac{3}{5}$

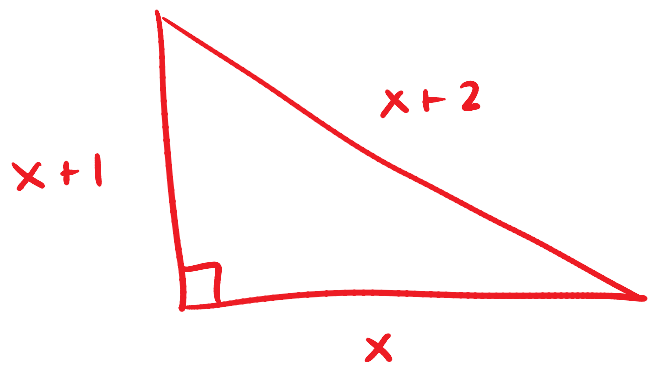
$3y = 60$

$y = 20$

$x = 20$

20

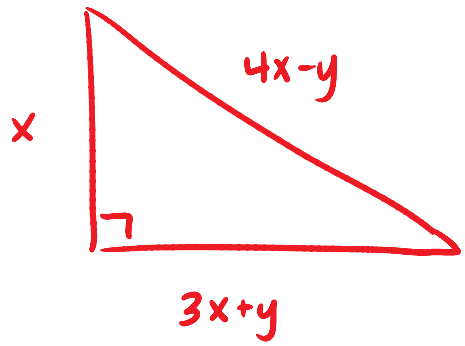
#20 Show that the only right Δ in which the lengths of the sides are consecutive integers is the (3,4,5) triangle.



$$x^2+(x+1)^2=(x+2)^2$$
$$x^2+x^2+2x+1=x^2+4x+4$$
$$2x^2+2x+1=x^2+4x+4$$
$$x^2-2x-3=0$$
$$(x-3)(x+1)=0$$
$$x=3,-1$$

$\boxed{3,4,5}$

#22



$$x^2+(3x+y)^2=(4x-y)^2$$
$$x^2+9x^2+6xy+y^2=16x^2-8xy+y^2$$
$$10x^2+6xy=16x^2-8xy$$
$$\frac{14xy}{x}=\frac{6x^2}{x}$$
$$\frac{14y}{6y}=\frac{6x}{6y}$$
$$\boxed{\frac{7}{3}=\frac{x}{y}}$$