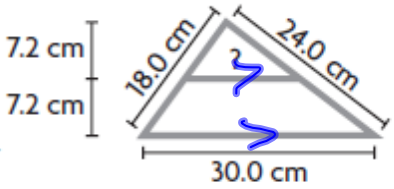
p. 414 #4

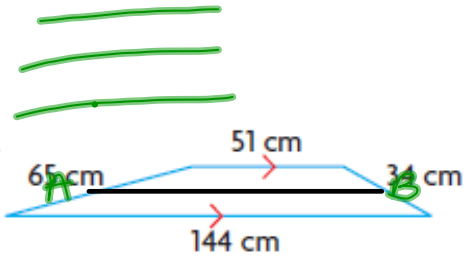
4. Remi is building a triangular wooden shelving unit. The base measures 30 cm and the slant sides measure 18 cm and 24 cm. He wants a horizontal shelf halfway between the base and the top. What length of wood should he cut for the shelf?



$l = 30 \div 2$
$= 15\text{cm}$

p. 414 #5

5. A trapezoid has parallel sides of length 51 cm and 144 cm. Its other sides measure 34 cm and 65 cm.



a) Determine the length of the bimedian joining the two non-parallel sides.

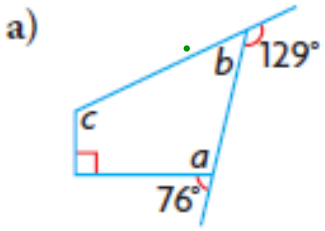
b) The distance between the parallel sides is 8 cm. How far is the bimedian from each?

a) $AB = \frac{51+144}{2}$
$= \frac{195}{2}$
$= 97.5$

b) 4cm

p. 394 #3

a)



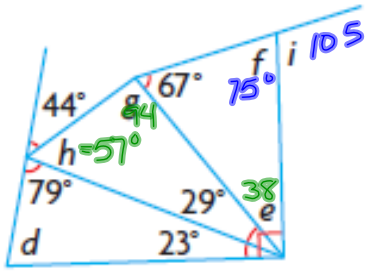
$\angle a = 180 - 76$
$= 104$

$\angle b = 180 - 129$
$= 51°$

$\angle c = 360 - 90 - 104 - 51$
$= 115°$

p. 394 #3

b)



$\angle h = 180 - 44 - 79$
$= 57°$

$\angle e = 90 - 29 - 23$
$= 38°$

$\angle g = 180 - 29 - 57$
$= 94°$

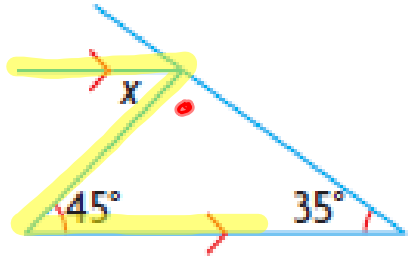
$\angle f = 180 - 38 - 67$
$= 75°$

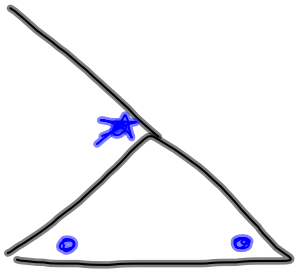
$\angle i = 180 - 75$
$= 105°$

$\angle d = 180 - 23 - 79$
$= 78°$

p. 395 #7

c)



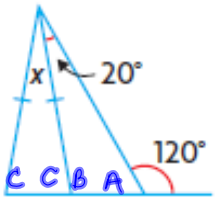


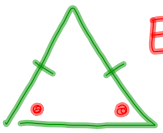
$x = 45°$ (alternate angle theorem)

$\theta + \theta = \angle$

p. 395 #7

b)





Equal sides = Equal angles

$\angle A = 180 - 120$

$= 60°$

$\angle B = 180 - 60 - 20$

$= 100°$

$\angle C = 180 - 100$

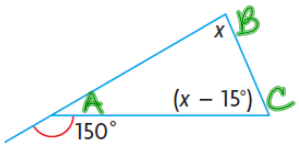
$= 80°$

$\angle x = 180 - 80 - 80$

$= 20°$

p. 395 #8

c)



$\angle A = 180 - 150$
$= 30°$

$180 = 30 + x + (x - 15)$

$180 = 2x + 15$
-15

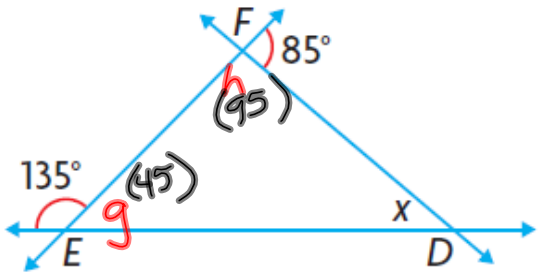
$\frac{165}{2} = \frac{2x}{2}$

$x = 82.5°$ ($\angle B$)

$\angle C = 82.5 - 15$
$= 67.5°$

p. 395 #8

b)



$\angle g = 180 - 135$
$= 45°$

$\angle h = 180 - 85$
$= 95°$

$\angle x = 180 - 45 - 95$
$= 40°$