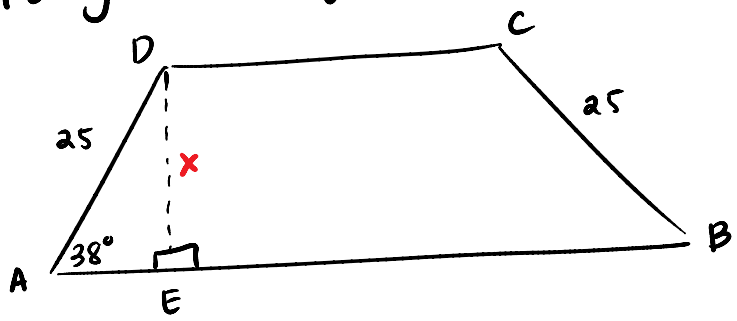
Quarter 3 Book Review

Pgs. 426 – 427
#5, 7, 16
Pgs. 598 – 602
#4, 5bd, 7, 11ac, 12, 23, 27 – 29, 32

pg 526

#5 Find the height of the isos. trapezoid

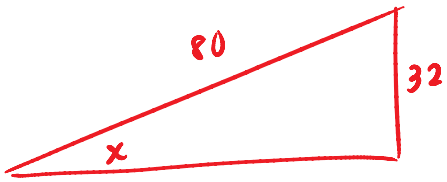


$\sin 38 = \frac{x}{25}$

$x = 25 \sin 38$

$x \approx 15.4$

#7 A department store escalator is 80 ft. long. If it rises 32 ft vertically, find the angle it makes with the floor.

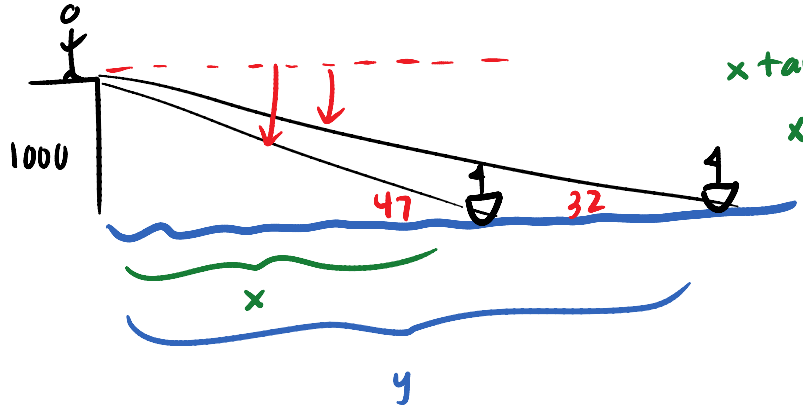


$\sin x = \frac{32}{80}$

$x = \sin^{-1}\left(\frac{32}{80}\right)$

$x \approx 23.6°$

#16 An observer on a cliff 1000 dm above sea level sights 2 ships due east. The angles of depression of the ships are 47° and 32°. Find to the nearest decimeter, the distance between the ships



$\tan 47 = \frac{1000}{x}$

$x \tan 47 = 1000$

$x = \frac{1000}{\tan 47}$

$\tan 32 = \frac{1000}{y}$

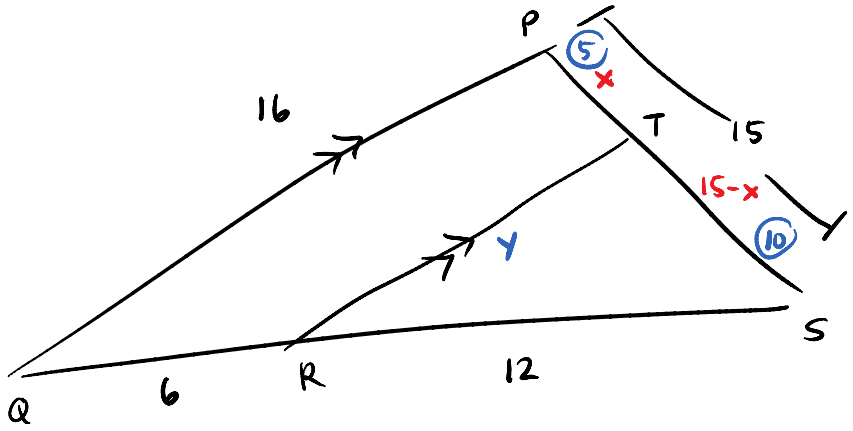
$y \tan 32 = 1000$

$y = \frac{1000}{\tan 32}$

$\text{dist} = \frac{1000}{\tan 32} - \frac{1000}{\tan 47} \approx 668 \text{ dcm}$

pg. 598

#4 Given: $\overline{PQ} \parallel \overline{TR}$



a. PT $\quad \frac{x}{6} = \frac{15-x}{12}$

$12x = 90 - 6x$

$18x = 90$

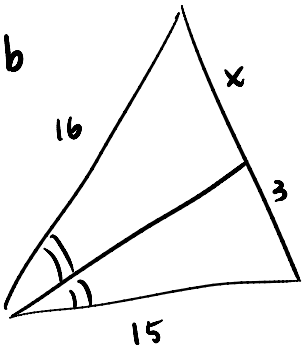
$\boxed{x = 5}$

b. TR $\quad \frac{10}{y} = \frac{15}{16}$

$15y = 160$

$\boxed{y = \frac{32}{3}}$

#5 b



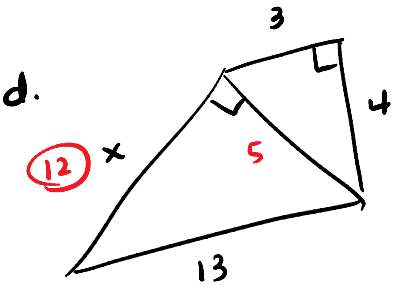
$\frac{16}{x} = \frac{15}{3}$

$\frac{16}{x} = \frac{5}{1}$

$5x = 16$

$\boxed{x = \frac{16}{5} = 3\frac{1}{5}}$

d.



#7 Find

a. WY $\quad 10^2 = 6 \cdot WY$

$100 = 6WY$

$\boxed{WY = 50/3}$

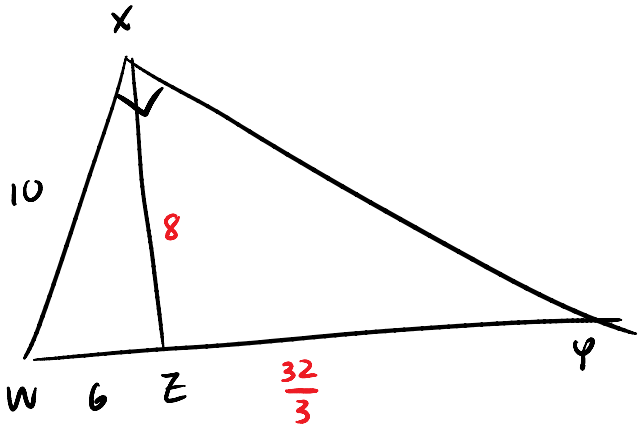
b. YZ $\rightarrow \quad 8^2 = 6 \cdot YZ$

$64 = 6YZ$

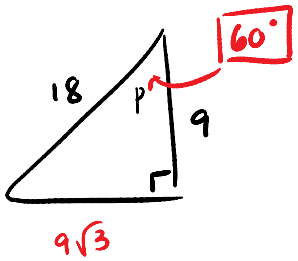
$\boxed{YZ = 32/3}$

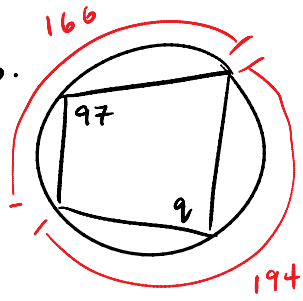
OR $\quad \frac{50}{3} - 6 = \left|\frac{32}{3}\right|$

c. XZ

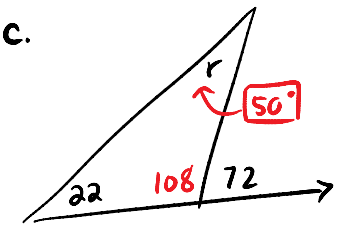


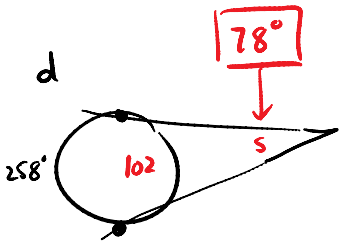
#11

a. 

b. 

$q = \frac{166}{2} = \boxed{83^\circ}$

c. 

d 

#12 Find the 4th prop. of 5, 3, 30

$\frac{5}{3} = \frac{30}{x}$

$5x = 90$

$\boxed{x = 18}$

b. Find the mean proportionals between 8 and 18

$\frac{8}{x} = \frac{x}{18}$

$x^2 = 144$

$\boxed{x = \pm 12}$

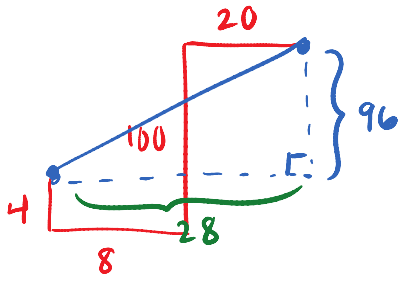
#23 Find the length of a 45° arc of a circle whose radius is 8.

$A.L. = \frac{45}{360} \cdot 16\pi$

$= \frac{1}{8} \cdot 16\pi$

$= 2\pi$

#27 A woman walks 20m west, 100 m south, another 8 m west, and then 4 m north. How far is she from her starting point



$96^2 + 28^2 = x^2$

$24^2 + 7^2 = x^2$

$x = 25$

$\boxed{100\text{m}}$

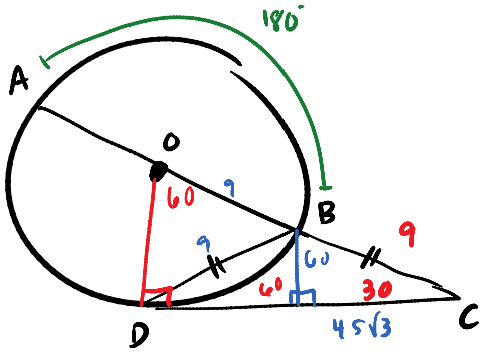
#28 Given: ⊙O

$\overline{CB} = 9$

$\angle C = 30°$

$\overline{BC} \cong \overline{BD}$

$\overline{CD}$ tangent



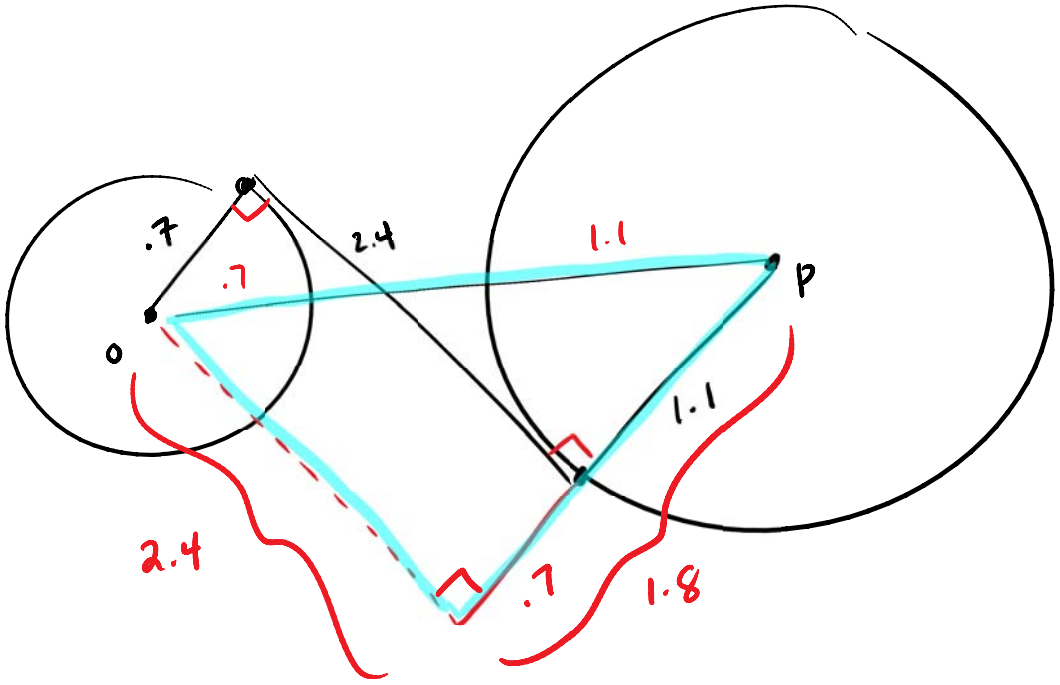
Find: a. $m\overset{\frown}{AD}$ b. CD c. Radius

360-240 = 120°

$4.5\sqrt{3} + 4.5\sqrt{3} = 9\sqrt{3}$

9

#29



$1.8^2 + 2.4^2 = x^2$

$18^2 + 24^2 = x^2$

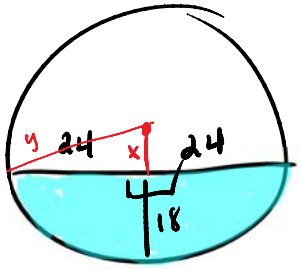
$3^2 + 4^2 = x^2$

$x = 5 \quad x \cdot 6 = 30 / 10 = 3$

a. $OP = 3$

b dist. between circles $= 3 - 1.1 - .7 = 1.2$

#32 The water in a drainpipe is 18 cm deep
The width of the surface of the water is 48 cm.
Find the radius of the pipe



$x^2 + 24^2 = y^2$ $\quad x + 18 = y$ so $y = 7 + 18$
$= \boxed{25}$

$x^2 + 24^2 = (x+18)^2$

$x^2 + 576 = x^2 + 36x + 324$

$252 = 36x$

$7 = x$