HW 6.4

April 1, 2015 7:45 PM

BY:

1a) $\theta = 14.48°$
$= 165.52°$

b) $\theta = 58.21°$
$= 121.79$

c) $\theta = 60°$
$= 120°$

d) $\theta = 45°$
$= 135°$

e) $\theta = 101.54°$
$= 78°$

f) NO ANSWER
< 180

g) NOT POSSIBLE

h) $\theta = 90°$

2a) $x = 15.76$
$y = 27.06$

b) $x = 28.53$

c) $x = 1.63$

d) $x = 31.99$
$y = 24.97$

e) $x = 87.32$
$y = 8.66$

f) not possible

g) $x = 75$
$y = 31.493$

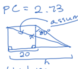
h) not possible

3) $124.45\ cm^2$

4) $154.838\ cm^2$

5) b & c

6) PD = 1.931
PC = 2.73

7) 

$x = 37.4$

8) 141 m

9) 4.979

10) 20

11) 1290.11m

12) 121 km/h

13) ?

14) Look at Tom's explanation (separate document)

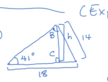
15) $PR = 4\sqrt{2}$
$WR = \sqrt{2}$
radius = 1

$\sin\theta = \frac{1}{3\sqrt{2}}$

$\theta = 13.632$

$\frac{0.2387}{WR} = \frac{0.854}{4\sqrt{2}}$ WR = 1.561m

(Explanations)

3) 

$\frac{0.656}{14} = \frac{\sin B}{18}$

$B = 58$

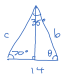
$C = 180 - 58 - 41 = 81$

$\sin(81) = \frac{h}{14}$

$h = 13.83$

$\frac{18 \cdot 13.83}{2}$

$= 124.449\ cm^2$

4) 

$\frac{0.574}{14} = \frac{0.94}{b}$

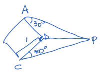
$b = 22.927$

$\sin(75) = \frac{h}{22.9}$

$h = 22.12$

$\frac{22.12 \cdot 14}{2}$

$= 154.838\ cm^2$

6) 

$\frac{180 - 90}{2} = 135°$

$\angle PDC = \angle PDA = 135°$

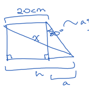
$\angle DPC = \angle APD = 15°$

$\frac{0.259}{1} = \frac{0.5}{PD}$

$PD = 1.931$

$\frac{0.259}{1} = \frac{0.707}{PC}$

$PC = 2.73$

7) 

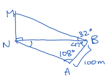
$\tan(30) = \frac{a}{20}$

$a = 11.547$

$h = 11.547 + 20 = 31.547$

$\sqrt{31.547^2 + 20^2} = 37.35$

↳ 37.4cm

8) 

$180 - 108 - 47 = 25$

$\frac{0.423}{100} = \frac{0.951}{NB}$

$NB = 224.823$

$\tan(32) = \frac{MN}{224.828}$

$MN = 140.485$

↳ 141m

#1) $\sin\theta = 0.25$

$\theta = \sin^{-1}(0.25)$

$\theta = 14.4°$

$\theta_2 = 180 - 14.4°$

$= 165.6°$

if $A + B = 180°$
$\sin A = \sin B$

1h) $\sin\theta = 1$

$\theta = \sin^{-1}(1)$

$\theta = 90°$

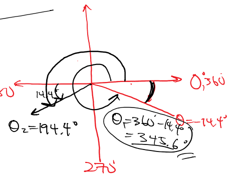
$\theta_2 = 90°$

$90° + 90° = 180°$

f) $\sin\theta = -0.25$

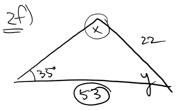
$\theta = \sin^{-1}(-0.25)$

$\theta = -14.4°$



$\sin(194.4) = -0.25$ $\theta_2 = 194.4°$

$\sin 345.6° = -0.25$

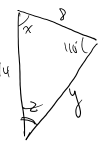
2f) 

$\frac{\sin 35°}{22} = \frac{\sin X}{53°}$

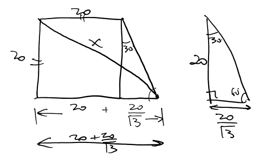
$\frac{53°(\sin 35°)}{22} = \sin x$

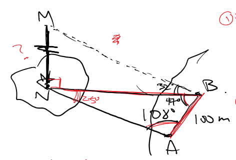
$1.38 = \sin x$

N.A.

2e) 

$\frac{\sin 110°}{14} = \frac{\sin z}{8}$

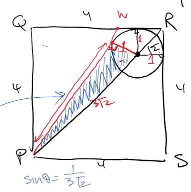
7) 

8) 

① Find NB

$\frac{\sin 25°}{AB} = \frac{\sin 108°}{NB}$

② Find MN.

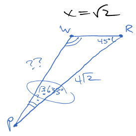
15) 

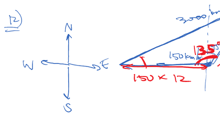
$\sin\theta = \frac{1}{3\sqrt{2}}$

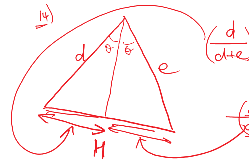
$\theta =$ ____

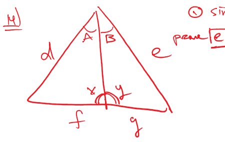
$4x = 4\sqrt{2}$

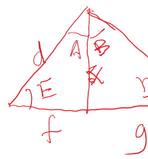
$x = \sqrt{2}$



12) 

14) 

16) 



)xH

)xH

nx = sing

x f = g x d

∠A = ∠B

$$\frac{\sin D}{d} = \frac{\sin E}{e} = \frac{\sin A}{f+g}$$

$$\frac{\sin D}{x} = \frac{\sin A}{g} \qquad \frac{\sin E}{x} = \frac{\sin A}{f}$$

$$g(\sin D) = x(\sin A) \quad f(\sin E) = x(\sin A)$$

$$g(\sin D) = f(\sin E)$$

$$\sin D = \frac{f(\sin E)}{g}$$

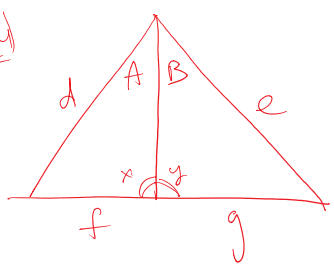
$$\frac{\frac{f(\sin E)}{g}}{d} = \frac{\sin E}{e}$$

$$\frac{f(\sin E)}{g \cdot d} = \frac{\sin E}{e}$$

$$\frac{1}{g \cdot d} = \frac{\sin E}{e} \cdot \frac{1}{f(\sin E)}$$

$$\frac{1}{g \cdot d} = \frac{1}{e \cdot f} \longrightarrow \boxed{g \cdot d = e \cdot f}$$

14)



$$\frac{\sin A}{f} = \frac{\sin x}{d} \qquad \frac{\sin B}{g} = \frac{\sin y}{e}$$

$$\boxed{\frac{d}{f} = \frac{\sin x}{\sin A}} \qquad \boxed{\frac{e}{g} = \frac{\sin y}{\sin B}}$$

$$\frac{d}{f} = \frac{e}{g}$$