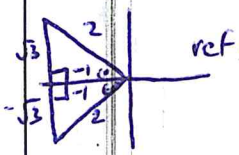
Student Recording Sheet

Station 1

1) $\cos\theta = -\frac{1}{2}$



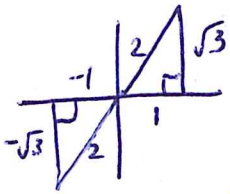
ref∠ = 60°

II: $\theta = 180 - 60 = 120°$

III: $\theta = 180 + 60 = 240°$

Station 1

2) $\tan\theta = \frac{\sqrt{3}}{1}$



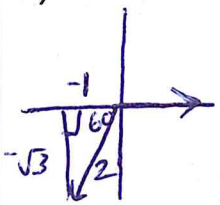
ref∠ = 60°

I: $\theta = 60°$

III: $\theta = 180 + 60 = 240°$

Station 2

1) 240°



ref∠ = 240 − 180 = 60°

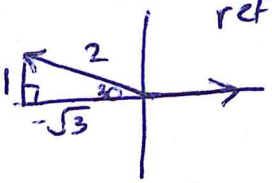
$\sin 240° = -\sqrt{3}/2$

$\cos 240° = -1/2$

$\tan 240° = \frac{-\sqrt{3}}{-1} = \sqrt{3}$

Station 2

2) −210°



ref∠ = −180 − (−210°) = 30°

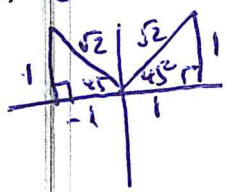
$\sin(-210°) = \frac{1}{2}$

$\cos(-210°) = -\sqrt{3}/2$

$\tan(-210°) = \frac{1}{-\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = -\frac{\sqrt{3}}{3}$

Station 1

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



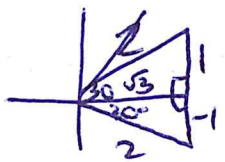
ref∠ = 45°

I: $\theta = 45°$

II: $\theta = 180 - 45 = 135°$

Station 1

4) $\cos\theta = \frac{\sqrt{3}}{2}$



ref∠ = 30°

I: $\theta = 30°$

IV: $\theta = 360 - 30 = 330°$

Station 2

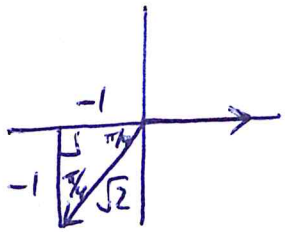
3) 150°

(same as)

except put 150° where −210° is

Station 2

4) $5\pi/4$ ref∠ = $\pi/4$



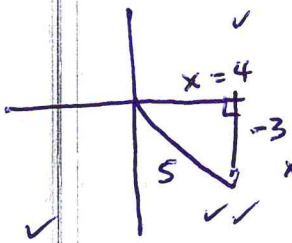
$\sin 5\pi/4 = \frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$

$\cos 5\pi/4 = \frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = -\frac{\sqrt{2}}{2}$

$\tan 5\pi/4 = \frac{-1}{-1} = 1$

Station 3

1) $\sin\theta = -3/5$, $\cos\theta +$



$x^2+(-3)^2=5^2$

$x^2+9=25$

$x^2=16$

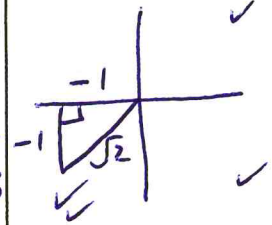
$x=4$

$\cos\theta = 4/5$

$\tan\theta = -3/4$

Station 3

2) $\tan\theta = \frac{1}{1}$, $\sin\theta -$

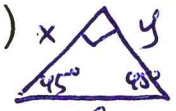


$\sin\theta = \frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{-\sqrt{2}}{2}$

$\cos\theta = \frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{-\sqrt{2}}{2}$

Station 4

1)

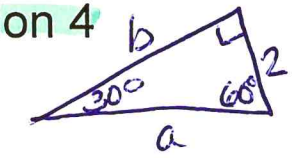


$x = y = \frac{18}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{18\sqrt{2}}{2} =$

$9\sqrt{2}$

Station 4

2)

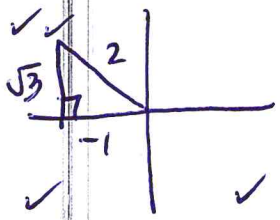


$a = 2 \cdot 2 = 4$

$b = 2 \cdot \sqrt{3} = 2\sqrt{3}$

Station 3

3) $\cos\theta = \frac{-1}{2}$, $\tan\theta -$

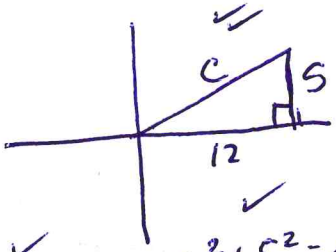


$\sin\theta = \sqrt{3}/2$

$\tan\theta = \frac{\sqrt{3}}{-1} = -\sqrt{3}$

Station 3

4) $\tan\theta = \frac{5}{12}$, $\cos\theta +$



$12^2+5^2=c^2$

$c^2=144+25$

$c^2=169$

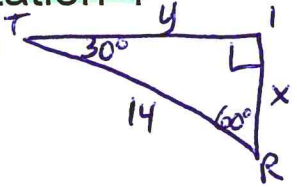
$c=13$

$\sin\theta = \frac{5}{13}$

$\cos\theta = 12/13$

Station 4

3)



x = short $= 14/2 = 7$

y = medium $= 7\sqrt{3}$

$\sin T = 7/14 = 1/2 = \cos R$

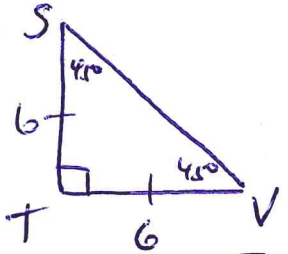
$\cos T = \frac{7\sqrt{3}}{14} = \frac{\sqrt{3}}{2} = \sin R$

$\tan T = \frac{7}{7\sqrt{3}} = \frac{1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \sqrt{3}/3$

$\tan R = \frac{7\sqrt{3}}{7} = \sqrt{3}$

Station 4

4)



hypot $= 6\sqrt{2}$

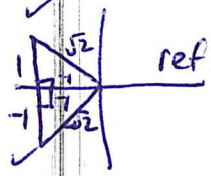
$\sin S = \cos S = \sin V = \cos V$

$= \frac{6}{6\sqrt{2}} = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$\tan V = \tan S = \frac{6\sqrt{2}}{6} = \sqrt{2}$

Station 5

1) $\cos\theta = \frac{-1}{\sqrt{2}}$

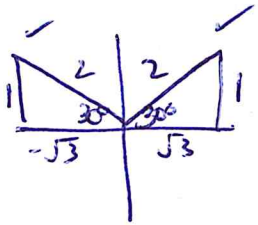


II: $\theta = 180 - 45 = 135°$

III: $\theta = 180 + 45 = 225°$

Station 5

2) $\sin\theta = \frac{1}{2}$



I: $\theta = 30°$

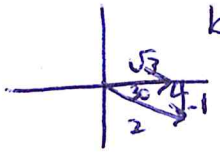
II: $\theta = 180 - 30° = 150°$

Station 6

1) $-30°$

0 to $-30°$

b) ref∠ = 30°



$\sin(-30°) = \frac{-1}{2}$

$\cos(-30°) = \frac{\sqrt{3}}{2}$

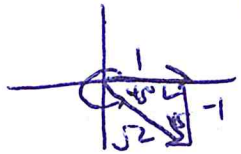
$\tan(-30°) = \frac{-1}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{-\sqrt{3}}{3}$

Station 6

2) $315°$

b) ref∠ = 360 - 315

45°



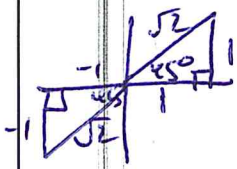
$\sin 315° = \frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{-\sqrt{2}}{2}$

$\cos 315° = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$\tan 315° = \frac{-1}{1} = -1$

Station 5

3) $\tan\theta = \frac{1}{1}$

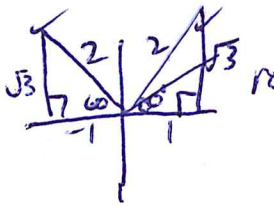


I: $\theta = 45°$

III: $\theta = 180 + 45 = 225°$

Station 5

4) $\sin\theta = \frac{\sqrt{3}}{2}$

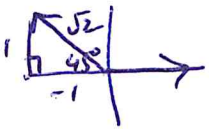


I: $\theta = 60°$

II: $\theta = 180 - 60 = 120°$

Station 6

3) $135°$



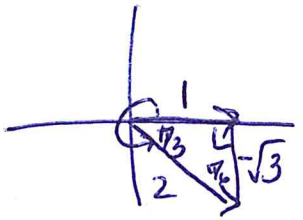
$\sin 135° = \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{2}$

$\cos 135° = \frac{-1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{-\sqrt{2}}{2}$

$\tan 135° = \frac{1}{-1} = -1$

Station 6

4) $5\pi/3$ ref∠ = $\pi/3$ (cross out 5)



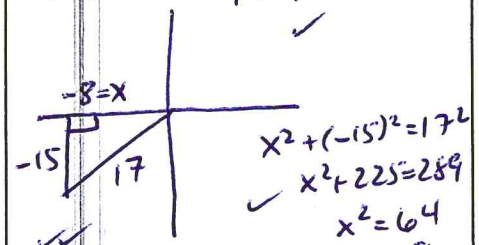
$\sin(5\pi/3) = \frac{-\sqrt{3}}{2}$

$\cos(5\pi/3) = \frac{1}{2}$

$\tan(5\pi/3) = \frac{-\sqrt{3}}{1} = -\sqrt{3}$

Station 7

1) $\sin\theta = \frac{-15}{17}$, tan +



$x^2 + (-15)^2 = 17^2$

$x^2 + 225 = 289$

$x^2 = 64$

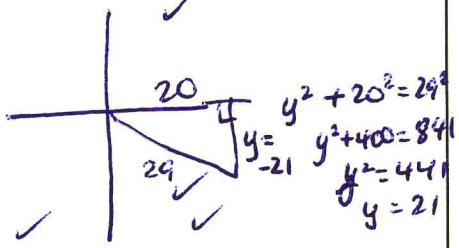
$x = 8$

$\cos\theta = -8/17$

$\tan\theta = \frac{-15}{-8} = \frac{15}{8}$

Station 7

2) $\cos\theta = \frac{20}{29}$, sin −



$y^2 + 20^2 = 29^2$

$y^2 + 400 = 841$

$y^2 = 441$

$y = 21$

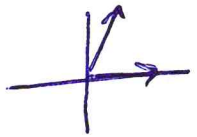
$\sin\theta = \frac{-21}{29}$

$\tan\theta = \frac{-21}{20}$

Station 8

1) a) $780° - 720° = 60°$

b)

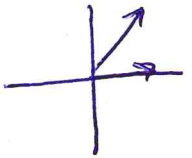


c) ref $\angle = 60°$

Station 8

2) a) $-675° + 720 = 45°$

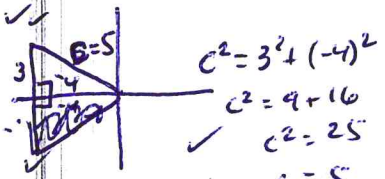
b)



c) ref $\angle = 45°$

Station 7

3) $\tan\theta = -3/4$, cos −



$c^2 = 3^2 + (-4)^2$

$c^2 = 9 + 16$

$c^2 = 25$

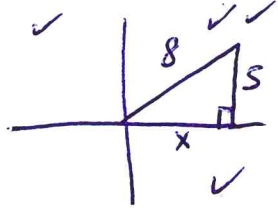
$c = 5$

$\sin\theta = 3/5$

$\cos\theta = -4/5$

Station 7

4) $\sin\theta = 5/8$, cos +



$x^2 + 5^2 = 8^2$

$x^2 + 25 = 64$

$x^2 = 41$

$x = \sqrt{41}$

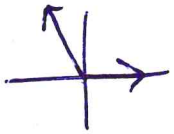
$\cos\theta = \frac{\sqrt{41}}{8}$

$\tan\theta = \frac{5}{\sqrt{41}} \cdot \frac{\sqrt{41}}{\sqrt{41}} = \frac{5\sqrt{41}}{41}$

Station 8

3) a) $480 - 360° = 120°$

b)



c) ref $\angle = 180 - 120$

$= 60°$

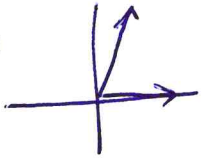
Station 8

$\frac{6\pi}{1} = \frac{18\pi}{3}$

4) a) $-\frac{17\pi}{3} + \frac{2\pi}{1} + \frac{2\pi}{1} + \frac{2\pi}{1}$

$-\frac{17\pi}{3} + \frac{18\pi}{3} = \pi/3$

b)



c) ref $\angle = -\frac{17\pi}{3}$

ref $\angle = \pi/3$