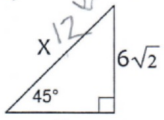
Version A

1) Find the EXACT value of X and Y in simplest radical form. **Show all of your work.**

a)



$X = 12$

$6\sqrt{2} \cdot \sqrt{2}$

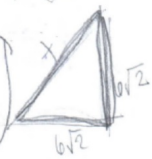
$6 \cdot 2 = 12$

$\left(\frac{\sqrt{2}}{\sqrt{2}}\right)\frac{6\sqrt{2}}{\sqrt{2}}$

$6\sqrt{2} = X$

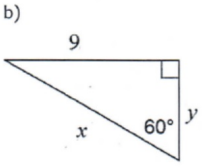
$Y = 6\sqrt{2}$

$X = 12$



$6\sqrt{}$

b)



$\frac{9}{\sqrt{3}}$

$Y = 3\sqrt{3}$

$X = 6\sqrt{3}$

$\left(\frac{\sqrt{3}}{\sqrt{3}}\right)\frac{9}{\sqrt{3}}$

$\frac{9\sqrt{3}}{3}$

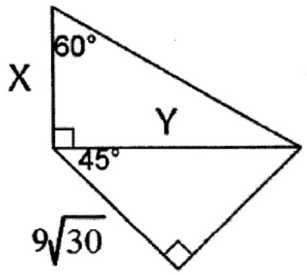
$3\sqrt{3}$

$X = 6\sqrt{3}$

$Y = 3\sqrt{3}$

Version A

2) Find the EXACT value of X and Y in simplest radical form. **Show all of your work.**



$Y = \sqrt{2}(9\sqrt{30})$

$Y = 9\sqrt{60}$

$Y = \sqrt{81 \cdot 60}$

4260

2 | 2130
2 | 1065
3 | 533
5 | 177
3 | 59
59

simplest

$Y = 18\sqrt{15}$

$\frac{X\sqrt{3}}{\sqrt{3}} = \frac{9\sqrt{60}}{\sqrt{3}}$

$X = 9\sqrt{20}$

$\frac{X\sqrt{3}}{\sqrt{3}} = \frac{18\sqrt{15}}{\sqrt{3}}$

$X = \frac{18\sqrt{15}}{\sqrt{3}}$

$\sqrt{\frac{15}{3}} = \frac{\sqrt{5}}{1}$

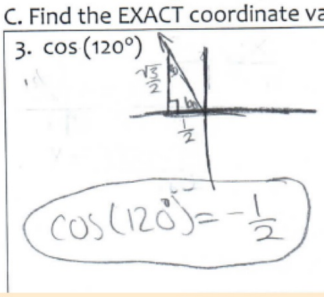
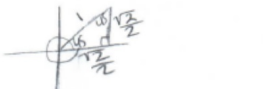
$X = 18\sqrt{5}$

Version A

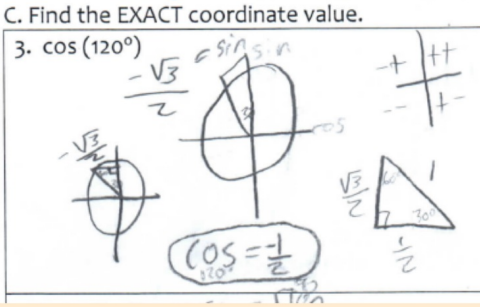
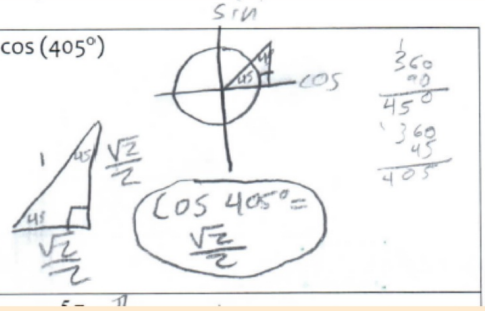
A. Convert to degrees (#5-6)

B. Sketch the angle and special right triangle (unless your point is on the x/y axis).

C. Find the EXACT coordinate value.

3. cos (120°)	4. cos (405°)
 $\cos(120^\circ) = -\frac{1}{2}$	 $\cos 405^\circ = \frac{\sqrt{2}}{2}$

C. Find the EXACT coordinate value.

3. cos (120°)	4. cos (405°)
	

Version A

5. $\sin\left(\frac{\pi}{2}\right)$

$\frac{\frac{\pi}{2}}{\pi} = \frac{x}{180}$ $\quad \pi \cdot x = \left(\frac{\pi}{2}\right) \cdot 180$

$x = \frac{180}{2} = 90°$

$90° = (\cos, \sin) = (0, 1)$

$\sin\left(\frac{\pi}{2}\right) = \boxed{1}$

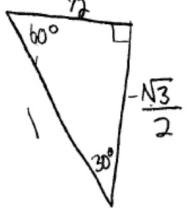
(no triangle, it's on the y-axis)

6. $\tan\left(\frac{5\pi}{3}\right)$

$\frac{\frac{5\pi}{3}}{\pi} = \frac{x}{180}$ $\quad \pi \cdot x = \left(\frac{5\pi}{3}\right) \cdot 180$

$x = \frac{5 \cdot 180}{3} = \frac{900}{3} =$

$x = 300°$

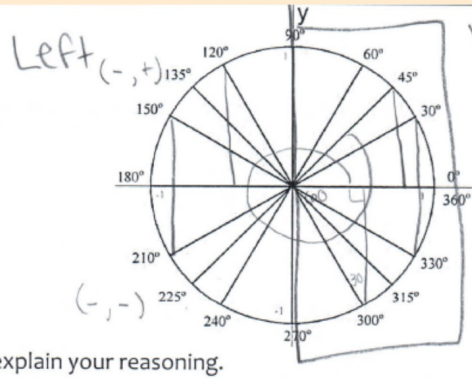


$\tan = \frac{\text{opp}}{\text{adj}}$

$\tan\left(\frac{5\pi}{3}\right) = \frac{-\frac{\sqrt{3}}{2}}{\frac{1}{2}} =$

$\frac{-\sqrt{3}}{1} = \boxed{-\sqrt{3}}$

Version A



7. Solve for θ, and explain your reasoning.

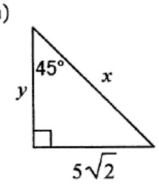
$\cos\theta = \frac{\sqrt{3}}{2}$

30° or 330° because the cos = x and (x, y). The $\frac{\sqrt{3}}{2}$ is positive not negitive so is will have to be on the right side because it would be either (+, +) or (+ -)

Version B

1) Find the EXACT value of X and Y in simplest radical form. **Show all of your work.**

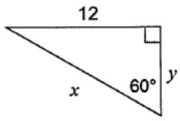
a)



$x = 10$
$y = 5\sqrt{2}$

$5\sqrt{2} \cdot \sqrt{2} = 5\sqrt{4} = 5 \cdot 2 = 10$

b)

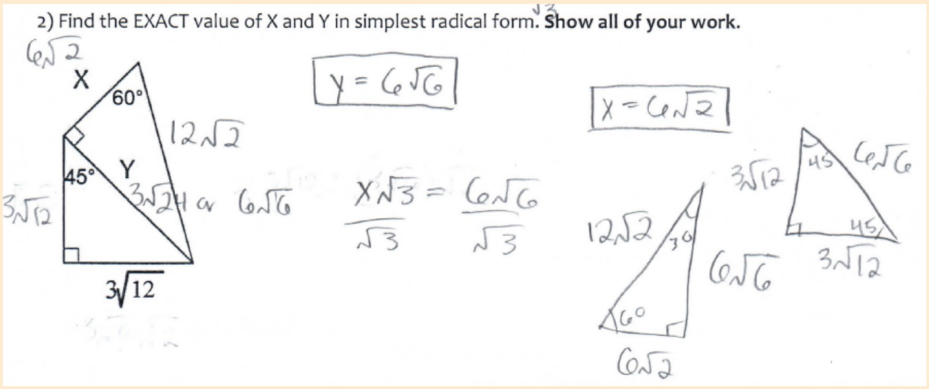


$x = 8\sqrt{3}$
$y = 4\sqrt{3}$

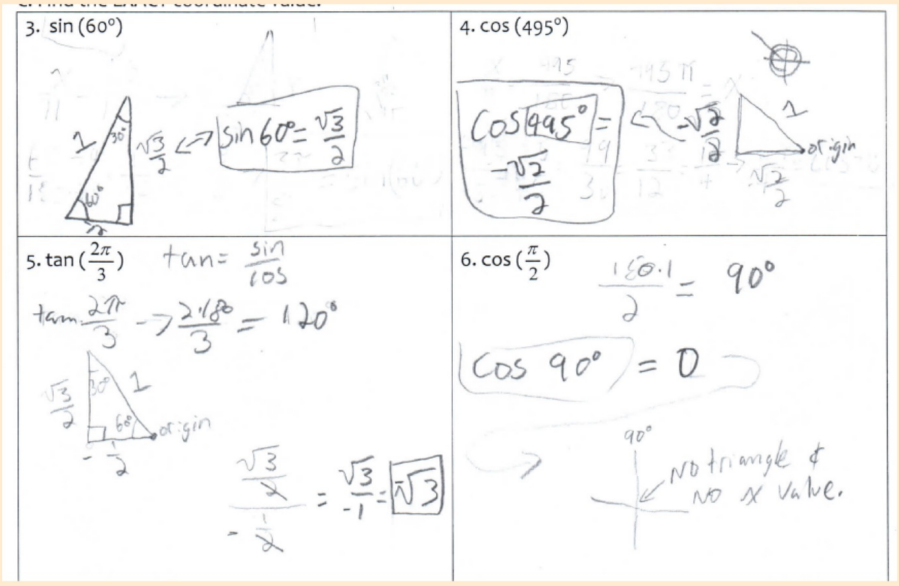
$12 \div \sqrt{3} = \frac{12}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{12\sqrt{3}}{3} = 4\sqrt{3}$

$4\sqrt{3} \cdot 2 = 8\sqrt{3}$

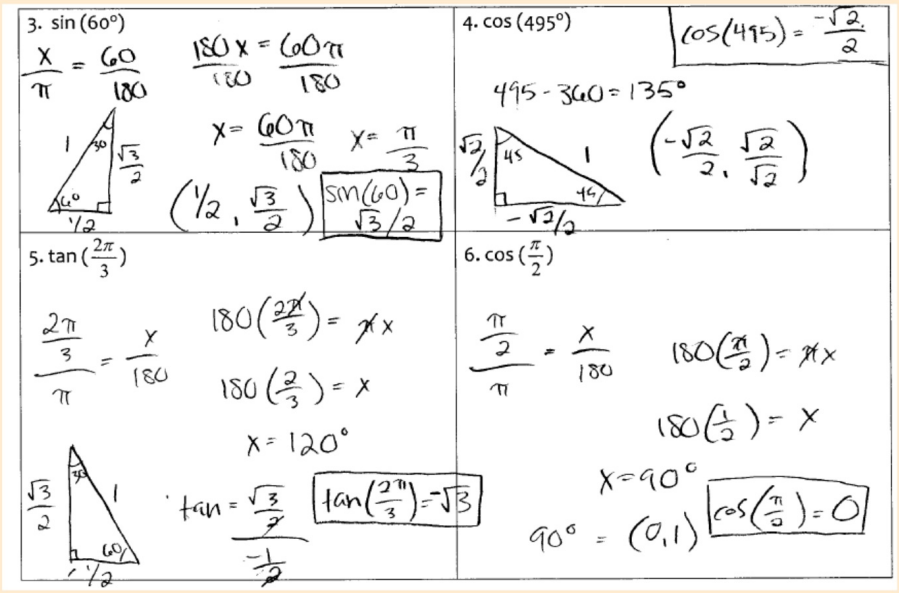
Version B


2) Find the EXACT value of X and Y in simplest radical form. Show all of your work.
6√2
X
60°
12√2
45°
Y
3√12
3√24 or 6√6
3√12
y = 6√6
x = 6√2
X√3 / √3 = 6√6 / √3
12√2
30
6√6
60°
6√2
3√12
45
6√6
45
3√12

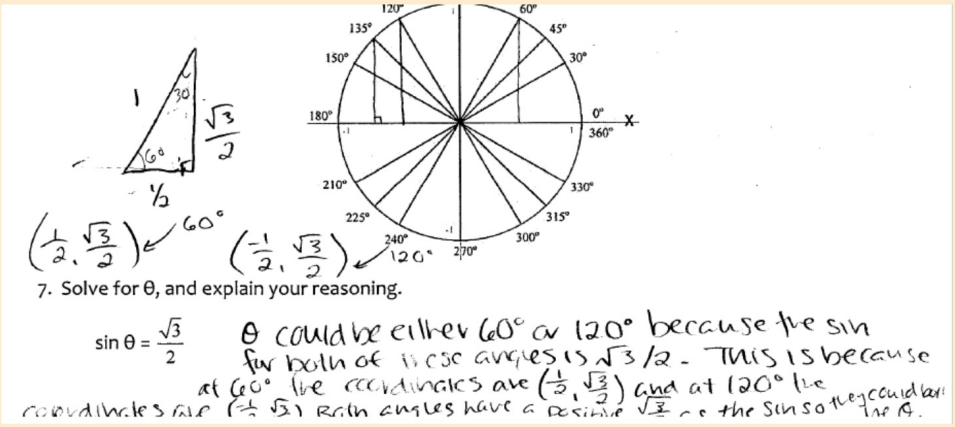
Version B


3. sin (60°)
1
30°
60°
√3/2
sin 60° = √3/2
4. cos (495°)
cos 495° = -√2/2
origin
5. tan (2π/3)
tan = sin/cos
tan 2π/3 → 2·180/3 = 120°
origin
-1/2
√3/2 / -1/2 = -√3
6. cos (π/2)
180·1/2 = 90°
cos 90° = 0
90°
No triangle & no x value.

Version B


3. sin (60°)
X/π = 60/180
180X/180 = 60π/180
X = 60π/180
X = π/3
(1/2, √3/2)
sin(60) = √3/2
4. cos (495°)
cos(495) = -√2/2
495 - 360 = 135°
(-√2/2, √2/2)
5. tan (2π/3)
2π/3 / π = X/180
180(2π/3) = πX
180(2/3) = X
X = 120°
tan = √3/-1
tan(2π/3) = -√3
6. cos (π/2)
π/2 / π = X/180
180(π/2) = πX
180(1/2) = X
X = 90°
90° = (0,1)
cos(π/2) = 0

Version B



7. Solve for θ, and explain your reasoning.

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

θ could be either 60° or 120° because the sin for both of these angles is $\sqrt{3}/2$. This is because at 60° the coordinates are $\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ and at 120° the coordinates are $\left(\frac{-1}{2}, \sqrt{3}\right)$ Both angles have a positive $\frac{\sqrt{3}}{2}$ so the sin so they could be in QI & QII.