TRIG TEST STUDY GUIDE

1. $78 \cdot \frac{\pi}{180} = \frac{78\pi}{180} = \boxed{\frac{13\pi}{30}}$

2. $55 \cdot \frac{\pi}{180} = \frac{55\pi}{180} = \boxed{\frac{11\pi}{36}}$

3. $\frac{14\pi}{23} \cdot \frac{180}{\pi} = \frac{2520}{23} = \boxed{109.6^\circ}$

4. $\frac{6\pi}{47} \cdot \frac{180}{\pi} = \frac{1080}{47} = 22.97 \approx \boxed{23^\circ}$

5. $780^\circ - 360^\circ = 420^\circ$

$420^\circ - 360^\circ = \boxed{60^\circ}$ coterminal

$60^\circ - 360^\circ = \boxed{-300^\circ}$

6. $-675^\circ + 360^\circ = \boxed{-315^\circ}$ coterminal

$-315^\circ + 360^\circ = \boxed{45^\circ}$

7. $\frac{8\pi}{3} \cdot \frac{180}{\pi} = 480^\circ - 360^\circ = \boxed{120^\circ}$ coterminal

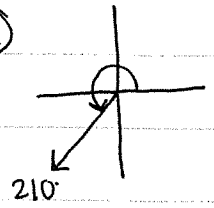
$120^\circ - 360^\circ = \boxed{-240^\circ}$

8. $\frac{-17\pi}{6} \cdot \frac{180}{\pi} = -510^\circ + 360^\circ = \boxed{-150^\circ}$ coterminal

$-150^\circ + 360^\circ = \boxed{210^\circ}$

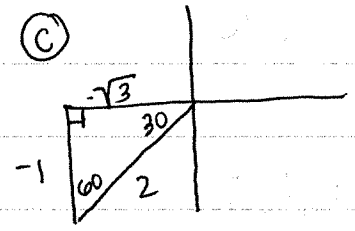
9. $210°$

(A)



(B) R.A.: $30°$

(C)



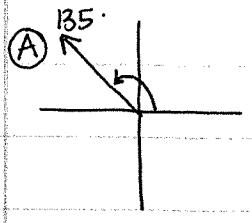
(D) $\sin 210° = -1/2$

$\cos 210° = -\sqrt{3}/2$

$\tan 210° = -1/\sqrt{3} = \sqrt{3}/3$

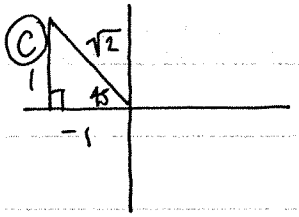
10. $135°$

(A)



(B) R.A.: $45°$

(C)



(D) $\sin 135° = 1/\sqrt{2} = \sqrt{2}/2$

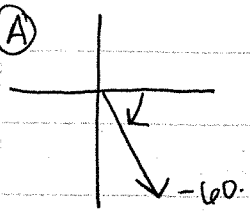
$\cos 135° = -1/\sqrt{2} = -\sqrt{2}/2$

$\tan 135° = 1/-1 = -1$

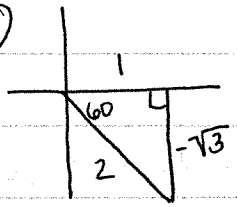
11. $-60°$

(B) R.A.: $60°$

(A)



(C)



(D) $\sin -60° = -\sqrt{3}/2$

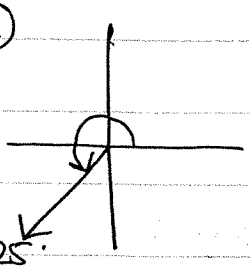
$\cos -60° = 1/2$

$\tan -60° = -\sqrt{3}/1$

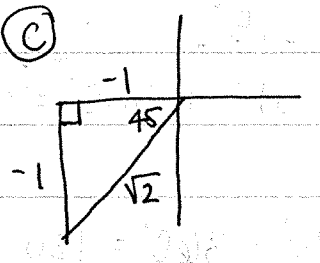
12. $\frac{5\pi}{4} \cdot \frac{180}{\pi} = 225°$

(B) R.A.: $45°$

(A)



(C)



(D) $\sin 225° = -1/\sqrt{2} = -\sqrt{2}/2$

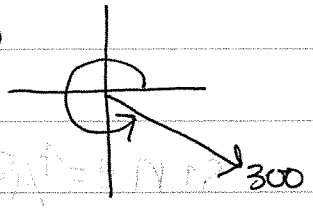
$\cos 225° = -1/\sqrt{2} = -\sqrt{2}/2$

$\tan 225° = -1/-1 = 1$

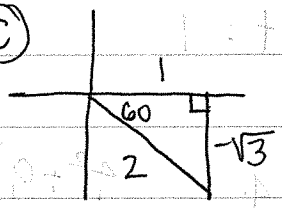
13. $\frac{5\pi}{3} \cdot \frac{180}{\pi} = 300°$

(B) R.A.: 60°

(A)



(C)



(D) $\sin 300° = -\sqrt{3}/2$

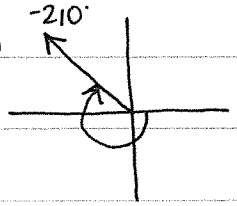
$\cos 300° = 1/2$

$\tan 300° = -\sqrt{3}/1$

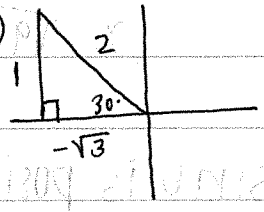
14. $\frac{-7\pi}{6} \cdot \frac{180}{\pi} = -210°$

(B) R.A.: 30°

(A)



(C)



(D) $\sin -210° = 1/2$

$\cos -210° = -\sqrt{3}/2$

$\tan -210° = 1/-\sqrt{3} = -\sqrt{3}/3$

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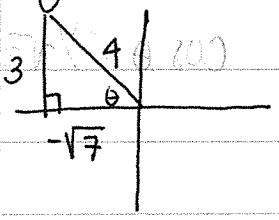
15. $\sin\theta = 3/4$ & $\tan\theta$ is negative.

quadrant: 2



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

$9 + x^2 = 16$

$x^2 = 7$

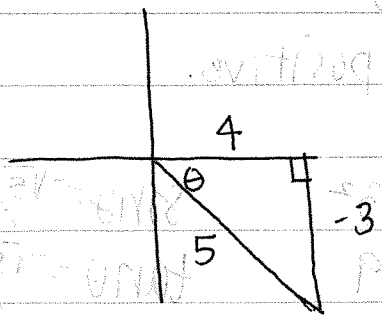
$x = \sqrt{7}$

$\cos\theta = -\sqrt{7}/4$

$\tan\theta = 3/-\sqrt{7} = -3\sqrt{7}/7$

16. $\sin\theta = -3/5$ & $\cos\theta$ is positive.

quadrant: 4



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

$9 + x^2 = 25$

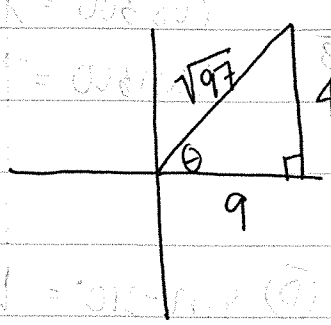
$x^2 = 16$

$x = 4$

$\cos\theta = 4/5$

$\tan\theta = -3/4$

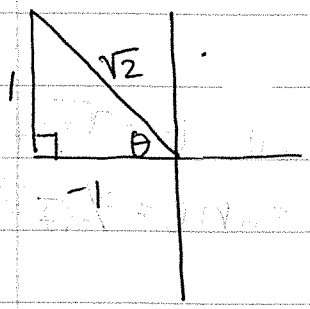
17. $\tan\theta = 4/9$ & $\cos\theta$ is positive.
quadrant: 1



$4^2 + 9^2 = x^2$
$16 + 81 = x^2$
$x^2 = 97$
$\boxed{x = \sqrt{97}}$

$\sin\theta = 4/\sqrt{97} = 4\sqrt{97}/97$
$\cos\theta = 9/\sqrt{97} = 9\sqrt{97}/97$

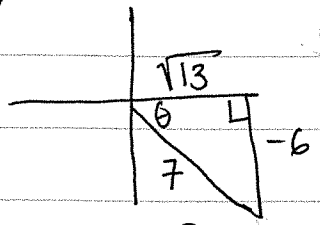
18. $\tan\theta = -1$ & $\sin\theta$ is positive.
quadrant: 2



$1^2 + (-1)^2 = x^2$
$x^2 = 2$
$\boxed{x = \sqrt{2}}$

$\sin\theta = 1/\sqrt{2} = \sqrt{2}/2$
$\cos\theta = -1/\sqrt{2} = -\sqrt{2}/2$

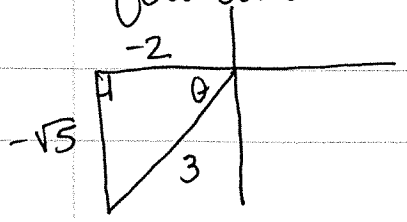
19. $\sin\theta = -6/7$ & $\tan\theta$ is negative.
quadrant: 4



$(-6)^2 + x^2 = 7^2$
$36 + x^2 = 49$
$\boxed{x = \sqrt{13}}$

$\cos\theta = \sqrt{13}/7$
$\tan\theta = -6/\sqrt{13} = -6\sqrt{13}/13$

20. $\cos\theta = -2/3$ & $\tan\theta$ is positive.
quadrant: 3



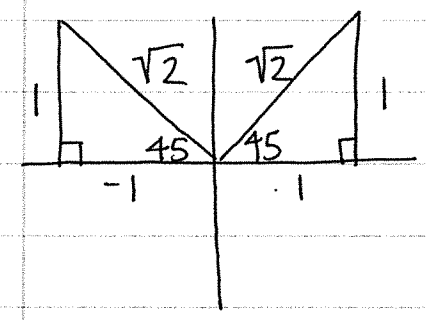
$(-2)^2 + x^2 = 3^2$
$4 + x^2 = 9$
$\boxed{x = \sqrt{5}}$

$\sin\theta = -\sqrt{5}/3$
$\tan\theta = -\sqrt{5}/-2$

21. $\sin\theta = 1/\sqrt{2}$

quadrants: 1, 2

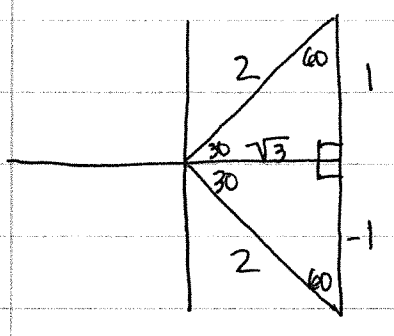
$\theta = 45°, 135°$



22. $\cos\theta = \sqrt{3}/2$

quadrants: 1, 4

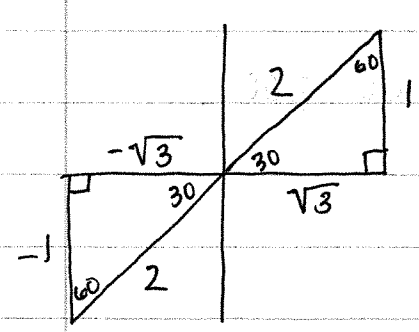
$\theta = 30°, 330°$



23. $\tan\theta = 1/\sqrt{3}$

quadrants: 1, 3

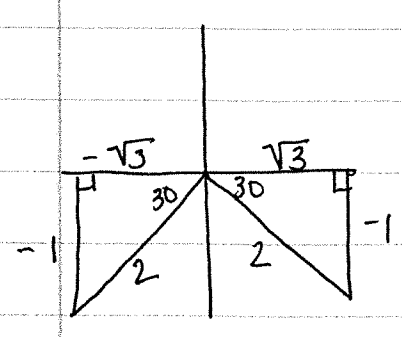
$\theta = 30°, 210°$



24. $\sin\theta = -1/2$

quadrants: 3, 4

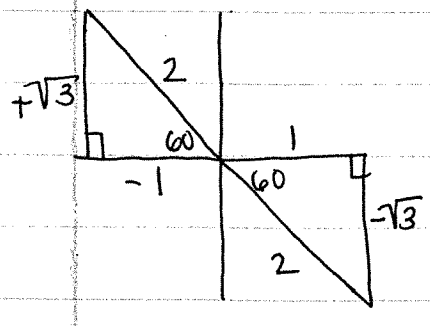
$\theta = 210°, 330°$



25. $\tan\theta = -\sqrt{3}$

quadrants: 2, 4

$\theta = 120°, 300°$

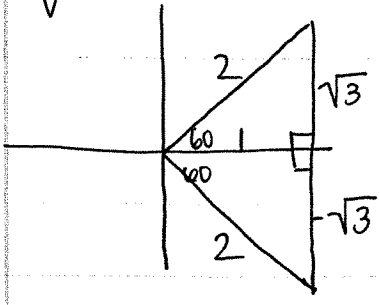


26. $\frac{4\cos\theta}{4} = \frac{2}{4}$

$\cos\theta = 1/2$

quadrants: 1, 4

$\theta = 60°, 300°$

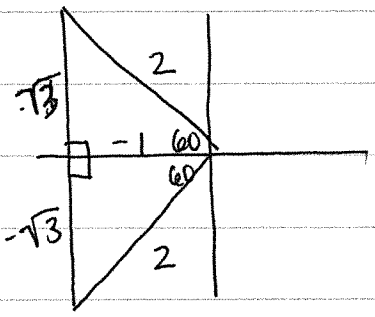


27. $2\cos\theta + 3 = 2$
$\quad -3 \quad -3$

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

$\boxed{\cos\theta = -1/2}$

quadrants: 2, 3



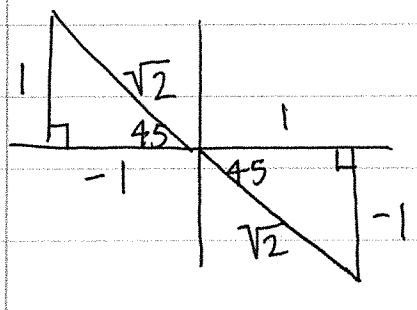
$\boxed{\theta = 120^\circ, 240^\circ}$

28. $\frac{-3\tan\theta}{-3} = \frac{3}{-3}$

$\boxed{\tan\theta = -1}$

quadrants: 2, 4

$\boxed{\theta = 135^\circ, 315^\circ}$

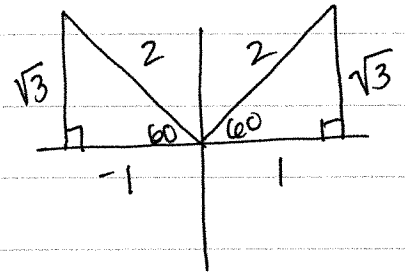


29. $4\sin\theta = 2\sqrt{3} = 0$

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

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

quadrants: 1, 2



$\boxed{\theta = 120^\circ, 60^\circ}$