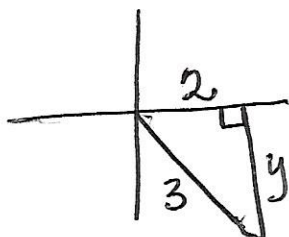


Part I: Place the letter of the correct answer in the space provided at the right. (6 marks)

1. In which quadrant is the terminal arm of angle θ if $\theta = 250^\circ$? 1. C
 A) I B) II C) III D) IV
2. Which is equivalent to $\sin 60^\circ$? 2. D
 A) $\cos 120^\circ$ B) $\sin 210^\circ$ C) $\sin 300^\circ$ D) $\cos 330^\circ$
3. The point $P(4, -7)$ is on the terminal arm of angle θ . What is the exact value of $\sin \theta$? 3. A
 A) $\frac{-7}{\sqrt{65}}$ B) $\frac{4}{\sqrt{65}}$ C) $\frac{-7}{\sqrt{33}}$ D) $\frac{4}{\sqrt{33}}$
4. Which quadrant does the terminal arm of angle θ lie in if $\sin \theta > 0$ and $\tan \theta < 0$? 4. B
 A) I B) II C) III D) IV
5. Which expression does not have a value of 1? 5. B
 A) $\cos 0^\circ$ B) $\cos 180^\circ$ C) $\sin 90^\circ$ D) $\tan 225^\circ$
6. What is the reference angle θ_R for $\theta = 285^\circ$? 6. 75
 A) 105 B) 55 C) 65 D) -55
7. What is the exact value of $\sin 240^\circ$? 7. C
 A) $\frac{1}{2}$ B) $-\frac{1}{2}$ C) $-\frac{\sqrt{3}}{2}$ D) $\frac{\sqrt{3}}{2}$
8. Solve each equation, for $0 \leq \theta < 360^\circ$. $\sin \theta = -1$ 8. D
 A) 0 B) 90 C) 180 D) 270

Part II: Show all workings in the space provided. (20 marks)

1. An angle is in standard position with its terminal arm in quadrant IV. If $\cos \theta = \frac{2}{3}$, draw a diagram and determine the exact value of the other two primary trig ratios. (4 mks)



$$\begin{aligned} 2^2 + y^2 &= 3^2 \\ y^2 &= 9 - 4 \\ y &= \pm\sqrt{5} \\ \boxed{y = -\sqrt{5}} \end{aligned}$$

$$\therefore \sin \theta = \frac{-\sqrt{5}}{3}$$

$$\tan \theta = \frac{-\sqrt{5}}{2}$$