

Practice Questions for CRT, Part 2

1. $\sin\left(\tan^{-1}\left(-\frac{5}{2}\right)\right) =$

(a) $-\frac{\sqrt{29}}{2}$

(d) $-\frac{2}{5}$

(b) $-\frac{5}{\sqrt{29}}$

(e) $-\frac{2}{\sqrt{21}}$

(c) $-\frac{\sqrt{21}}{5}$

2. If x is an angle in quadrant 2 and $\sin(x) = \frac{1}{3}$, then $\tan(x) = \dots$

(a) $-\frac{1}{\sqrt{8}}$

(d) $-\frac{3}{\sqrt{8}}$

(b) $\frac{1}{\sqrt{8}}$

(e) $\frac{\sqrt{8}}{3}$

(c) $\frac{3}{\sqrt{8}}$

3. 300° is equal to what radian measure?

(a) $\frac{3\pi}{5}$

(d) $\frac{5\pi}{6}$

(b) $\frac{5\pi}{3}$

(e) $\frac{5\pi}{2}$

(c) $\frac{6\pi}{5}$

4. Which of the following expressions has the same value as $\cos(-225^\circ)$?

(a) $\sin(225^\circ)$

(d) $\cos(45^\circ)$

(b) $\tan(135^\circ)$

(e) $\sin(45^\circ)$

(c) $\sin(-225^\circ)$

5. Complete the identity: $1 - \cos^2(3x) = \dots$

(a) $\sin^2(3x)$

(d) $\frac{1}{3} \sin^2(3x)$

(b) $-\sin^2(3x)$

(e) $\sqrt{\sin(3x)}$

(c) $3 \sin^2(x)$

6. If $\pi < x < \frac{7\pi}{6}$ then which of the following must be true?

(a) $\tan(x) < \sin(x)$

(d) $\sin(x) < \cos(x)$

(b) $\cos(x) > \tan(x)$

(e) $\tan(x) > 1$

(c) $\cos(x) < \sin(x)$

7. Which of the following satisfies the equation $\sin(x) + 3 \sin(x) \cos(x) = 2 \sin(x)$?

(a) $x = \sin^{-1}\left(\frac{1}{2}\right)$

(d) $x = \cos^{-1}\left(\frac{1}{3}\right)$

(b) $x = \tan\left(\frac{2}{3}\right)$

(e) $x = \frac{2\pi}{3}$

(c) $x = \sec(3)$

8. In a certain right triangle ABC the hypotenuse AB measures 17 cm and the leg AC measures 15 cm. What is the value of $\cos(\beta)$ where $\beta = \angle ABC$?

(a) $\frac{17}{8}$

(d) $\frac{15}{8}$

(b) $\frac{15}{17}$

(e) $\frac{8}{17}$

(c) $\frac{8}{15}$

9. Find all the solutions of the equation $\sin(x) = \frac{\sqrt{3}}{2}$ for which $0 \leq x \leq \pi$.

(a) $x = \frac{\pi}{2}$

(d) $x = \frac{\pi}{6}, x = \frac{5\pi}{6}$

(b) $x = \frac{\pi}{3}, x = \frac{2\pi}{3}$

(e) $x = 0$

(c) $x = \frac{\pi}{4}, x = \frac{3\pi}{4}$

10. $\sin^{-1}\left(\frac{1}{2}\right) =$

(a) $\frac{\pi}{3}$

(d) $\frac{\pi}{6}$

(b) $\frac{\pi}{4}$

(e) $\frac{4\pi}{3}$

(c) $\frac{5\pi}{6}$