ALBERTA MATH 30-1 · 10 QUESTIONS

Trigonometry — Practice Test

This practice test was made by AI and there may be mistakes. If a question or answer looks wrong, use the Flag a mistake button to let Brett know so he can fix it.

1 **The graph below shows a sinusoidal function on the interval $0 \le x < 2\pi$. The minimum value and period are**

- **A** Minimum: 2 Period: $\frac{2\pi}{3}$
- **B** Minimum: -2 Period: $\frac{2\pi}{3}$
- **C** Minimum: 2 Period: $\frac{\pi}{3}$
- **D** Minimum: 6 Period: $\frac{2\pi}{3}$

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2 The exact value of $\sec\left(\frac{3\pi}{4}\right)$ is

- A $\sqrt{2}$
- B $-\frac{2\sqrt{3}}{3}$
- C $-\sqrt{2}$
- D 2

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3 An expression equivalent to sec x - cos x is

- A $\tan^2 x$
- B sin x tan x
- C $\sin^2 x$
- D cot x

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4 **A circle has a diameter of 30 cm. An arc of the circle is subtended by a central angle of 100°. The length of the arc, to the nearest tenth of a centimetre, is**

ANSWER _____

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5 **If $\tan\theta = -\frac{3}{4}$ and θ is in Quadrant IV, then the exact value of $\sin\theta$ is**

A $\frac{3}{5}$

B $-\frac{4}{5}$

C $-\frac{3}{5}$

D $\frac{4}{5}$

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6 **The graph below shows a sinusoidal function. The phase shift and vertical displacement are**

A Phase shift: $\frac{\pi}{6}$ to the right Vertical displacement: -1

B Phase shift: $\frac{\pi}{6}$ to the left Vertical displacement: -1

C Phase shift: $\frac{\pi}{2}$ to the right Vertical displacement: -1

D Phase shift: $\frac{\pi}{6}$ to the right Vertical displacement: 1

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7 **The exact value of $\sin(\frac{\pi}{3})\tan(\frac{\pi}{6})$ can be written as $\frac{a}{b}$, in lowest terms. The value of a + b is**

ANSWER _____

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8 An expression equivalent to $\frac{\sec x}{\tan x + \cot x}$ is

- **A** cos x
- **B** tan x
- **C** sin x
- **D** sec x

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9 The general solution to the equation $\cos x = -\frac{1}{2}$ is

- **A** $x = \frac{2\pi}{3} + 2\pi n \; x = \frac{4\pi}{3} + 2\pi n, n \in Z$
- **B** $x = \frac{\pi}{3} + 2\pi n \; x = \frac{2\pi}{3} + 2\pi n, n \in Z$
- **C** $x = \frac{2\pi}{3} + \pi n \; x = \frac{4\pi}{3} + \pi n, n \in Z$
- **D** $x = \frac{5\pi}{6} + 2\pi n \; x = \frac{7\pi}{6} + 2\pi n, n \in Z$

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10 **The sum of all solutions to the equation $2\sin^2 x = 1$ on the interval $0 \leq x < 2\pi$ can be written in the form $k\pi$. The value of k is**

ANSWER

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ANSWER KEY

1. A
2. C
3. B
4. 26.2
5. C
6. A
7. 3
8. C
9. A
10. 4

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