NORTHWEST TERRITORIES PRE-CALCULUS 12 (MPREC12) · UNIT C · 25 QUESTIONS

Trigonometric Functions and Identities — 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 amplitude of $y = 3 \sin x$ is**

- **A** 3
- **B** 1
- **C** 2π
- **D** 0

Understand It with Pulse | Flag a mistake

2 The period of $y = \sin(2x)$ is

- **A** 4π
- **B** 2π
- **C** $\frac{\pi}{2}$
- **D** π

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3 The period of $y = \cos(\frac{x}{2})$ is

- **A** 2π
- **B** 4π
- **C** π
- **D** $\frac{\pi}{2}$

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4 The phase shift of $y = \sin\left(x - \frac{\pi}{3}\right)$ is

- **A** up by $\frac{\pi}{3}$
- **B** left by $\frac{\pi}{3}$
- **C** right by π
- **D** right by $\frac{\pi}{3}$

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5 The midline of $y = 2 \cos x + 1$ is

- **A** $y = 2$
- **B** $y = 1$
- **C** $y = 0$
- **D** $y = 3$

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6 **For y = sin x, the amplitude is**

A 1

B 2

C π

D 2π

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7 **For y = 2 cos x, with point P at x = 0, the maximum value of this function is**

ANSWER _____

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8 For y = sin(2x), the period of this function is

- A 4π
- B 2π
- C $\frac{\pi}{2}$
- D π

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9 The exact value of $\sin \frac{\pi}{6}$ is

- A $\frac{\sqrt{2}}{2}$
- B $\frac{\sqrt{3}}{2}$
- C 1
- D $\frac{1}{2}$

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10 The exact value of $\cos \frac{\pi}{3}$ is

- **A** 1
- **B** $\frac{\sqrt{3}}{2}$
- **C** $\frac{1}{2}$
- **D** 0

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11 The exact value of $\tan \frac{\pi}{4}$ is

- **A** 1
- **B** 0
- **C** $\frac{1}{2}$
- **D** $\sqrt{3}$

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12 The exact value of $\sin \frac{\pi}{2}$ is

- **A** 0
- **B** 1
- **C** -1
- **D** $\frac{1}{2}$

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13 If $\sin \theta = \frac{3}{5}$ and $\cos \theta > 0$, then $\cos \theta$ is

- **A** $\frac{4}{5}$
- **B** $-\frac{4}{5}$
- **C** $\frac{3}{4}$
- **D** $\frac{5}{4}$

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14 **The identity $\tan \theta$ equals**

- **A** $\sin \theta \cos \theta$
- **B** $\frac{\cos \theta}{\sin \theta}$
- **C** $\frac{\sin \theta}{\cos \theta}$
- **D** $1 - \sin \theta$

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15 **The expression $1 - \cos^2 \theta$ equals**

- **A** $\tan^2 \theta$
- **B** $\cos^2 \theta$
- **C** $\sin^2 \theta$
- **D** 1

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16 **The double angle identity for sin 2θ is**

- **A** $\sin^2 \theta + \cos^2 \theta$
- **B** $2 \sin \theta \cos \theta$
- **C** $2 \cos^2 \theta - 1$
- **D** $\sin \theta + \cos \theta$

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17 **The solutions of sin x = 0 are for x from 0 to 2π, not including 2π**

- **A** $0, \pi$
- **B** $0, \pi, 2\pi$
- **C** $\frac{\pi}{2}, \frac{3\pi}{2}$
- **D** 0

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18 The solutions of $\cos x = \frac{1}{2}$ are for x from 0 to 2π, not including 2π

A $\frac{\pi}{3}, \frac{2\pi}{3}$

B $\frac{\pi}{3}, \frac{5\pi}{3}$

C $\frac{\pi}{6}, \frac{5\pi}{6}$

D $\frac{\pi}{2}, \frac{3\pi}{2}$

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19 The solutions of 2 sin x - 1 = 0 are for x from 0 to 2π, not including 2π

A $\frac{5\pi}{6}, \frac{7\pi}{6}$

B $\frac{\pi}{3}, \frac{2\pi}{3}$

C $\frac{\pi}{6}, \frac{7\pi}{6}$

D $\frac{\pi}{6}, \frac{5\pi}{6}$

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20 The solutions of tan x = 1 are for x from 0 to 2π, not including 2π

A $\frac{\pi}{4}, \frac{3\pi}{4}$

B $\frac{\pi}{4}, \frac{5\pi}{4}$

C $\frac{\pi}{3}, \frac{4\pi}{3}$

D $\frac{\pi}{6}, \frac{7\pi}{6}$

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21 The function $y = \sin(x - \frac{\pi}{2})$ equals

A -sin x

B cos x

C -cos x

D sin x

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22 For y = 4 cos(3x), the amplitude is

- A 12
- B 3
- C 4
- D 2π

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23 For y = 4 cos(3x), the period is

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

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24 **The range of $y = 3 \sin x - 2$ is**

- A from -5 to 1
- B from -3 to 3
- C from -2 to 2
- D from 1 to 5

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25 **The value of cos 0 is**

- A -1
- B 0
- C 1
- D $\frac{1}{2}$

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ANSWER KEY

1. A
2. D
3. B
4. D
5. B
6. A
7. 2
8. D
9. D
10. C
11. A
12. B
13. A
14. C
15. C
16. B
17. A
18. B
19. D
20. B
21. C
22. C
23. D
24. A
25. C

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