

## Derivatives of Trigonometric Functions

**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

**Find the derivative.**

1)  $y = \frac{8}{x} + 6 \sec x$  1) \_\_\_\_\_

A)  $y' = -\frac{8}{x^2} + 6 \tan^2 x$

B)  $y' = -\frac{8}{x^2} - 6 \csc x$

C)  $y' = \frac{8}{x^2} - 6 \sec x \tan x$

D)  $y' = -\frac{8}{x^2} + 6 \sec x \tan x$

2)  $y = \frac{2}{\sin x} + \frac{1}{\cot x}$  2) \_\_\_\_\_

A)  $y' = 2 \cos x - \csc^2 x$

B)  $y' = -2 \csc x \cot x + \sec^2 x$

C)  $y' = 2 \csc x \cot x - \csc^2 x$

D)  $y' = 2 \csc x \cot x - \sec^2 x$

3)  $s = t^7 - \csc t + 2$  3) \_\_\_\_\_

A)  $\frac{ds}{dt} = 7t^6 + \csc t \cot t$

B)  $\frac{ds}{dt} = 7t^6 + \cot^2 t$

C)  $\frac{ds}{dt} = 7t^6 - \csc t \cot t$

D)  $\frac{ds}{dt} = t^6 - \cot^2 t + 2$

4)  $r = 9 - \theta^3 \cos \theta$  4) \_\_\_\_\_

A)  $\frac{dr}{d\theta} = 3\theta^2 \sin \theta - \theta^3 \cos \theta$

B)  $\frac{dr}{d\theta} = -3\theta^2 \cos \theta + \theta^3 \sin \theta$

C)  $\frac{dr}{d\theta} = 3\theta^2 \cos \theta - \theta^3 \sin \theta$

D)  $\frac{dr}{d\theta} = 3\theta^2 \sin \theta$

**Solve the problem.**

5) Find the tangent to  $y = \cos x$  at  $x = \frac{\pi}{2}$ . 5) \_\_\_\_\_

A)  $y = 1$

B)  $y = x + \frac{\pi}{2}$

C)  $y = -x - \frac{\pi}{2}$

D)  $y = -x + \frac{\pi}{2}$

6) Find the tangent to  $y = 2 - \sin x$  at  $x = \pi$ . 6) \_\_\_\_\_

A)  $y = -x + \pi - 2$

B)  $y = x - \pi + 2$

C)  $y = x - 2$

D)  $y = -x + 2$

7) Find the tangent to  $y = \cot x$  at  $x = \frac{\pi}{4}$ . 7) \_\_\_\_\_

A)  $y = 2x + 1$

B)  $y = 2x - \frac{\pi}{2} + 1$

C)  $y = -2x + \frac{\pi}{2} + 1$

D)  $y = -2x + \frac{\pi}{2}$

Answer Key

Testname: DERIVATIVES OF TRIGONOMETRIC FUNCTIONS

- 1) D
- 2) B
- 3) A
- 4) B
- 5) D
- 6) B
- 7) C