

- 1) The slope of the tangent line to the graph of $y = x^{5/2}$ is:

- 2) If $f(x) = \frac{1}{3\sqrt{x}}$, then $f'(x)$ is equal to:

- 3) Which of the following is the equation of the line tangent to the graph of $y = \sqrt{x}$ at $x = 9$?
(I) $y = -x - \frac{1}{6}$ (II) $y = \frac{1}{2}x + 3$
(III) $y = \frac{1}{6}x + \frac{3}{2}$ (IV) $y = \frac{1}{2}x^{-1/2} - \frac{1}{6}$

- 4) Determine: $g'(1)$ if $g(x) = 2x^2 - x + 3$

- 5) Determine: $f'(x)$ if $f(x) = \frac{5}{x^2}$

- 6) Determine: $\frac{dy}{dx}$ if $y = 4 - 6x$

- 7) Determine the derivative: $f(x) = 4x^{5/4}$

- 8) What is the steepness of the graph of: $f(x) = \frac{1}{x^2}$ at the point $(-1, \dots)$

- 9) The slope of the line tangent to $f(x) = x^{6/5}$ at the point when $x = 1$ is

- 10) What is the derivative of $f(x) = x^{4/5}$ at the point $(32, 16)$? what is the geometric meaning of your answer?

- 11) Determine the derivative: $f(x) = \frac{1}{\sqrt{x}}$

Answer Key

Testname: SECTION1.3

1) $\frac{5}{2}x^{3/2}$

2) $\frac{-1}{3x^{4/3}}$

3) (III)

4) 3

5) $-10x^{-3} = \frac{-10}{x^3}$

6) -6

7) $f'(x) = 5x^{1/4}$

8) $f'(x) = -\frac{2}{x^3}$ then, $f'(-1) = 2$ at the point $(-1, 1)$

9) $f'(x) = \frac{6}{5}x^{1/5}$ then $f'(1) = 6/5$

10) $f'(x) = \frac{2}{5}$

11) $f'(x) = -\frac{1}{2}x^{-3/2}$