

## Derivative-2

Write the equation of the tangent line to the function at the indicated domain value of the function.

1.  $f(x) = x^5$ ; at  $x = 1$

2.  $f(x) = \frac{1}{x^2}$ ; at  $x = 3$

3.  $f(x) = 3\sqrt{x}$ ; at  $x = 9$

4.  $f(x) = \sqrt[3]{x}$ ; at  $x = 8$

5.  $f(x) = x^3 + x^2 - 12$ ; at  $x = -3$

6.  $f(x) = 2x^3 - 3x^2 + 2x$ ; at  $x = -2$

7.  $f(x) = 2x^3 - \frac{10}{x}$ ; at  $x = -10$

8.  $f(x) = x^5 - 7x^2 + 10x + 9$ ; at  $x = -1$

## Answer Key

1.  $y = 5x - 4$

2.  $y = -\frac{2}{27}x + \frac{1}{3}$

3.  $y = \frac{1}{\sqrt{2}}x + \left(9 - \frac{9}{\sqrt{2}}\right)$

4.  $y = \frac{1}{12}x + \frac{4}{3}$

5.  $y = 21x + 33$

6.  $y = 38x + 44$

7.  $y = 60x - 1399$

8.  $y = 29x + 20$