Name_____

# Calculus Practice: Derivatives of Functions 2b

**For each problem, find the slope of the function at the given value.**

1) $f(x) = -2x^2 - 12x - 16$ at $x = -4$

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

3) $f(x) = -x^3 + 4x^2 - 7$ at $x = 3$

4) $f(x) = x^3 - x^2$ at $x = 1$

5) $f(x) = -\dfrac{1}{x^2 + 1}$ at $x = 3$

6) $f(x) = \dfrac{3}{x^2 - 16}$ at $x = -1$

7) $f(x) = \dfrac{2}{x^2 - 16}$ at $x = 3$

8) $f(x) = \dfrac{2}{x - 1}$ at $x = 4$

9) $f(x) = (x + 4)^{\frac{1}{3}}$ at $x = 5$

10) $f(x) = (-3x + 6)^{\frac{1}{2}}$ at $x = -4$

11) $f(x) = -(2x - 8)^{\frac{2}{3}}$ at $x = 1$

12) $f(x) = -(x + 4)^{\frac{1}{3}}$ at $x = 5$

13) $f(x) = \ln(-x + 4)$ at $x = -2$

14) $f(x) = \ln(-x)$ at $x = -2$

15) $f(x) = e^{x+3}$ at $x = -2$

16) $f(x) = -\ln(-x + 2)$ at $x = 0$

17) $f(x) = -2\csc(2x)$ at $x = -\frac{3\pi}{4}$

18) $f(x) = -2\tan(x)$ at $x = 0$

19) $f(x) = 2\csc(2x)$ at $x = -\frac{3\pi}{4}$

20) $f(x) = 2\cos(2x)$ at $x = \frac{\pi}{2}$

Name_____

## Calculus Practice: Derivatives of Functions 2b

**For each problem, find the slope of the function at the given value.**

1) $f(x) = -2x^2 - 12x - 16$ at $x = -4$

4

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

8

3) $f(x) = -x^3 + 4x^2 - 7$ at $x = 3$

−3

4) $f(x) = x^3 - x^2$ at $x = 1$

1

5) $f(x) = -\dfrac{1}{x^2 + 1}$ at $x = 3$

$\dfrac{3}{50}$

6) $f(x) = \dfrac{3}{x^2 - 16}$ at $x = -1$

$\dfrac{2}{75}$

7) $f(x) = \dfrac{2}{x^2 - 16}$ at $x = 3$

$-\dfrac{12}{49}$

8) $f(x) = \dfrac{2}{x - 1}$ at $x = 4$

$-\dfrac{2}{9}$

9) $f(x) = (x + 4)^{\frac{1}{3}}$ at $x = 5$

$\dfrac{\sqrt[3]{9}}{27}$

10) $f(x) = (-3x + 6)^{\frac{1}{2}}$ at $x = -4$

$-\dfrac{\sqrt{2}}{4}$

11) $f(x) = -(2x - 8)^{\frac{2}{3}}$ at $x = 1$

$$\frac{2\sqrt[3]{36}}{9}$$

12) $f(x) = -(x + 4)^{\frac{1}{3}}$ at $x = 5$

$$-\frac{\sqrt[3]{9}}{27}$$

13) $f(x) = \ln(-x + 4)$ at $x = -2$

$$-\frac{1}{6}$$

14) $f(x) = \ln(-x)$ at $x = -2$

$$-\frac{1}{2}$$

15) $f(x) = e^{x+3}$ at $x = -2$

$$e$$

16) $f(x) = -\ln(-x + 2)$ at $x = 0$

$$\frac{1}{2}$$

17) $f(x) = -2\csc(2x)$ at $x = -\frac{3\pi}{4}$

$$0$$

18) $f(x) = -2\tan(x)$ at $x = 0$

$$-2$$

19) $f(x) = 2\csc(2x)$ at $x = -\frac{3\pi}{4}$

$$0$$

20) $f(x) = 2\cos(2x)$ at $x = \frac{\pi}{2}$

$$0$$