

Calculus Practice: Average Rate of Change 1b**For each problem, find the average rate of change of the function over the given interval.**

1) $y = -x^2 + 1$; $[-1, 1]$

2) $y = -x^2 + 1$; $[-2, 1]$

3) $y = x^2 + 2$; $[-2, 0]$

4) $f(x) = 2x^2 + 1$; $[0, 1]$

5) $f(x) = -2x^2 + 1$; $[-1, 2]$

6) $f(x) = \frac{1}{x-1}$; $[-5, -2]$

7) $f(x) = \frac{1}{x-1}$; $[-5, -3]$

8) $y = \frac{1}{x}$; $[2, 3]$

9) $f(x) = -\frac{1}{x+2}$; $[0, 1]$

10) $y = -\frac{1}{x}$; $[1, 3]$

For each problem, find the equation of the secant line that intersects the given points on the function.

11) $y = x^2 + 2x - 2$; $(-3, 1), (0, -2)$

12) $f(x) = x^2 + x + 2$; $(-2, 4), (1, 4)$

13) $y = 2x^2 + 2$; $(0, 2), (1, 4)$

14) $y = x^2 + 2$; $(-2, 6), (-1, 3)$

15) $f(x) = -2x^2 - 2$; $(-1, -4), (0, -2)$

16) $f(x) = -\frac{1}{x-2}$; $\left(-4, \frac{1}{6}\right), \left(-3, \frac{1}{5}\right)$

17) $f(x) = -\frac{1}{x-2}$; $\left(-2, \frac{1}{4}\right), \left(0, \frac{1}{2}\right)$

18) $y = -\frac{1}{x+2}$; $(-1, -1), \left(2, -\frac{1}{4}\right)$

19) $y = -\frac{1}{x+1}$; $(0, -1), \left(1, -\frac{1}{2}\right)$

20) $y = \frac{1}{x+3}$; $(-2, 1), \left(-1, \frac{1}{2}\right)$

Calculus Practice: Average Rate of Change 1b**For each problem, find the average rate of change of the function over the given interval.**

1) $y = -x^2 + 1$; $[-1, 1]$

0

2) $y = -x^2 + 1$; $[-2, 1]$

1

3) $y = x^2 + 2$; $[-2, 0]$

-2

4) $f(x) = 2x^2 + 1$; $[0, 1]$

2

5) $f(x) = -2x^2 + 1$; $[-1, 2]$

-2

6) $f(x) = \frac{1}{x-1}$; $[-5, -2]$

 $-\frac{1}{18}$

7) $f(x) = \frac{1}{x-1}$; $[-5, -3]$

 $-\frac{1}{24}$

8) $y = \frac{1}{x}$; $[2, 3]$

 $-\frac{1}{6}$

9) $f(x) = -\frac{1}{x+2}$; $[0, 1]$

 $\frac{1}{6}$

10) $y = -\frac{1}{x}$; $[1, 3]$

 $\frac{1}{3}$

For each problem, find the equation of the secant line that intersects the given points on the function.

11) $y = x^2 + 2x - 2$; $(-3, 1), (0, -2)$

$$y = -x - 2$$

12) $f(x) = x^2 + x + 2$; $(-2, 4), (1, 4)$

$$y = 4$$

13) $y = 2x^2 + 2$; $(0, 2), (1, 4)$

$$y = 2x + 2$$

14) $y = x^2 + 2$; $(-2, 6), (-1, 3)$

$$y = -3x$$

15) $f(x) = -2x^2 - 2$; $(-1, -4), (0, -2)$

$$y = 2x - 2$$

16) $f(x) = -\frac{1}{x-2}$; $(-4, \frac{1}{6}), (-3, \frac{1}{5})$

$$y = \frac{1}{30}x + \frac{3}{10}$$

17) $f(x) = -\frac{1}{x-2}$; $(-2, \frac{1}{4}), (0, \frac{1}{2})$

$$y = \frac{1}{8}x + \frac{1}{2}$$

18) $y = -\frac{1}{x+2}$; $(-1, -1), (2, -\frac{1}{4})$

$$y = \frac{1}{4}x - \frac{3}{4}$$

19) $y = -\frac{1}{x+1}$; $(0, -1), (1, -\frac{1}{2})$

$$y = \frac{1}{2}x - 1$$

20) $y = \frac{1}{x+3}$; $(-2, 1), (-1, \frac{1}{2})$

$$y = -\frac{1}{2}x$$