

Calculus Practice: Average Rate of Change 1a

For each problem, find the average rate of change of the function over the given interval.

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

- A) 8 B) 1
C) 2 D) -1

2) $y = x^2 + x + 1$; $[-3, 0]$

- A) -2 B) -6
C) 6 D) 0

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

- A) 2 B) -4
C) 1 D) -2

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

- A) -9 B) 6
C) 3 D) $-\frac{3}{2}$

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

- A) $-\frac{3}{2}$ B) 3
C) $\frac{3}{4}$ D) 1

6) $y = \frac{1}{x-2}$; $[-1, 0]$

- A) $\frac{1}{24}$ B) $-\frac{1}{6}$
C) 0 D) $-\frac{2}{3}$

7) $y = \frac{1}{x-2}$; $[-2, -1]$

- A) $\frac{1}{4}$ B) $\frac{1}{24}$
C) $-\frac{1}{24}$ D) $-\frac{1}{12}$

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

- A) $-\frac{1}{5}$ B) $-\frac{2}{5}$
C) $\frac{1}{10}$ D) $\frac{1}{40}$

9) $y = \frac{1}{x+1}$; $[0, 3]$

- A) $-\frac{1}{8}$ B) $-\frac{1}{2}$
C) $-\frac{1}{4}$ D) 0

10) $y = \frac{1}{x+3}$; $[-1, 0]$

- A) $\frac{1}{18}$ B) $-\frac{1}{3}$
C) $-\frac{1}{6}$ D) $\frac{1}{24}$

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

11) $f(x) = x^2 + 2$; $(0, 2), (2, 6)$

- A) $y = -\frac{1}{2}x + 2$ B) $y = -x + 2$
C) $y = 4x + 2$ D) $y = 2x + 2$

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

- A) $y = 4x + 3$ B) $y = 6x + 5$
C) $y = -\frac{1}{2}x - \frac{3}{2}$ D) $y = 2x + 1$

13) $f(x) = -2x^2 + x - 2$; $(-1, -5), (0, -2)$

A) $y = -12x - 17$

B) $y = 6x + 1$

C) $y = 3x - 2$

D) $y = \frac{3}{4}x - \frac{17}{4}$

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

A) $y = -x + 3$

B) $y = -\frac{1}{4}x + \frac{15}{4}$

C) $y = \frac{1}{3}x + \frac{13}{3}$

D) $y = -\frac{1}{3}x + \frac{11}{3}$

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

A) $y = 6$

B) $y = -\frac{1}{3}x + \frac{17}{3}$

C) $y = -4x + 2$

D) $y = -\frac{1}{2}x + \frac{11}{2}$

16) $y = -\frac{1}{x}$; $(1, -1), (2, -\frac{1}{2})$

A) $y = 2x - 3$

B) $y = \frac{1}{8}x - \frac{9}{8}$

C) $y = -1$

D) $y = \frac{1}{2}x - \frac{3}{2}$

17) $y = -\frac{1}{x-1}$; $(-5, \frac{1}{6}), (-2, \frac{1}{3})$

A) $y = \frac{1}{18}x + \frac{4}{9}$

B) $y = -\frac{1}{36}x + \frac{1}{36}$

C) $y = -\frac{1}{9}x - \frac{7}{18}$

D) $y = \frac{1}{9}x + \frac{13}{18}$

18) $f(x) = -\frac{1}{x+3}$; $(-1, -\frac{1}{2}), (2, -\frac{1}{5})$

A) $y = \frac{3}{10}x - \frac{1}{5}$

B) $y = \frac{1}{5}x - \frac{3}{10}$

C) $y = -\frac{3}{10}x - \frac{4}{5}$

D) $y = \frac{1}{10}x - \frac{2}{5}$

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

A) $y = -\frac{1}{72}x - \frac{17}{72}$

B) $y = -\frac{1}{18}x - \frac{4}{9}$

C) $y = \frac{2}{9}x + \frac{17}{18}$

D) $y = -\frac{2}{9}x - \frac{23}{18}$

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

A) $y = \frac{1}{6}x - \frac{5}{6}$

B) $y = -\frac{2}{3}x + \frac{5}{6}$

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

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