

Section 2.3

Date _____ Period _____

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

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

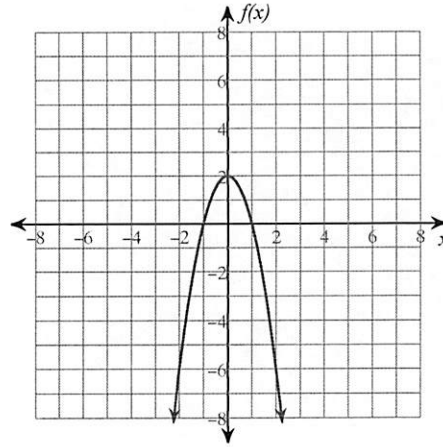
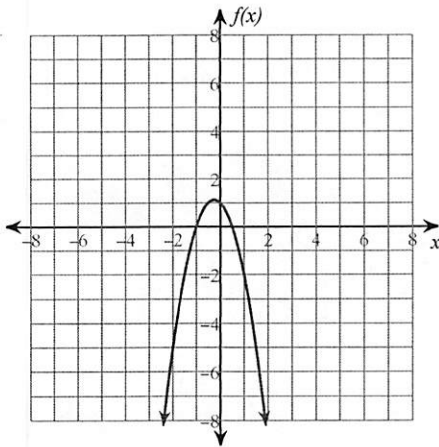
2) $f(x) = 2x^2 - 1$; $[1, 2]$

3) $f(x) = -x^2 - x - 2$; $[-2, 0]$

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

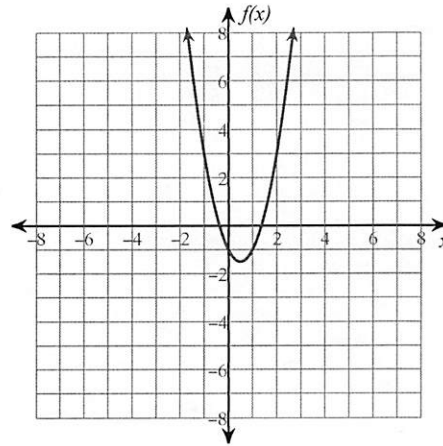
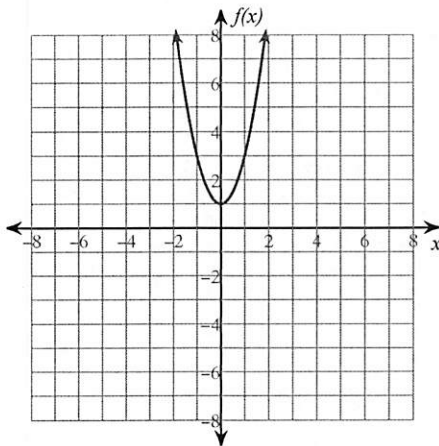
5) $f(x) = -2x^2 - x + 1$; $[-2, 0]$

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



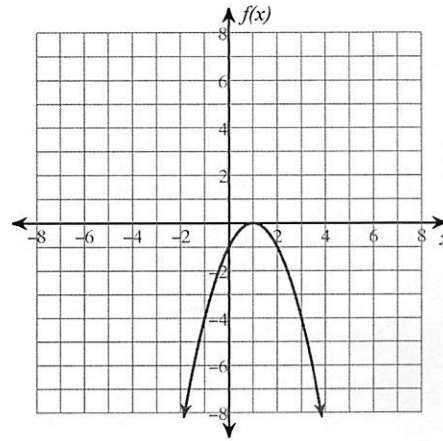
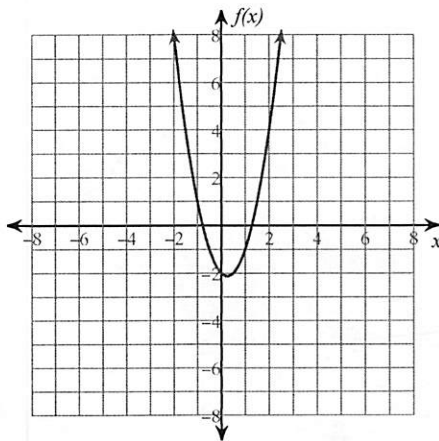
7) $f(x) = 2x^2 + 1$; $[0, 1]$

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



9) $f(x) = 2x^2 - x - 2$; $[0, 2]$

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



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

1) $f(x) = x^2 - 2$; $[-3, -2]$ **-5**

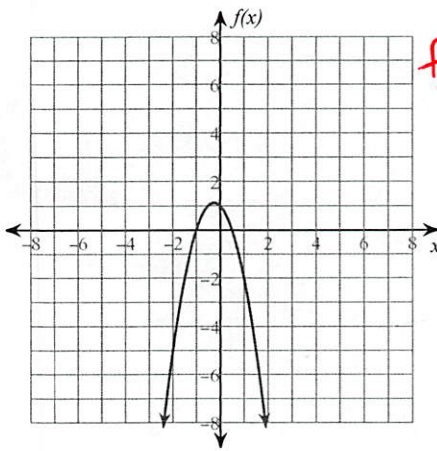
2) $f(x) = 2x^2 - 1$; $[1, 2]$ **6**

3) $f(x) = -x^2 - x - 2$; $[-2, 0]$ **1**

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

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

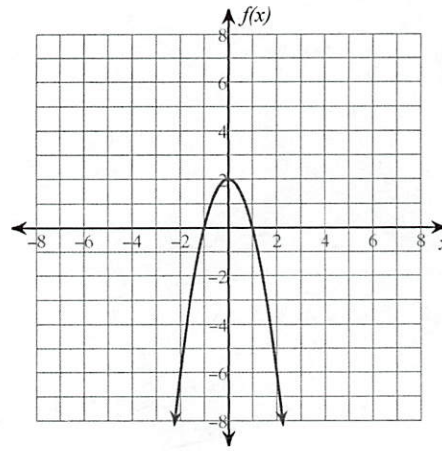
6) $f(x) = -2x^2 + 2$; $[0, 1]$



$$\frac{f(0) - f(-2)}{0 - (-2)}$$

$$\frac{1 - (-5)}{2}$$

$$= \boxed{3}$$



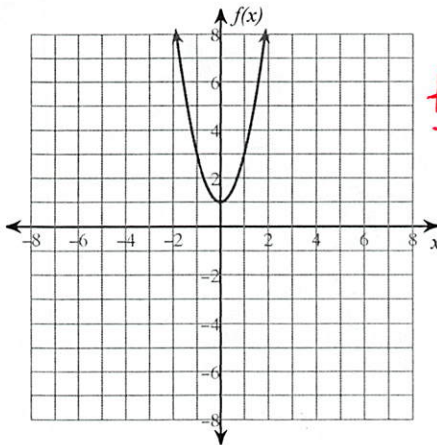
$$\frac{f(1) - f(0)}{1 - 0}$$

$$\frac{0 - 2}{1 - 0}$$

$$= \boxed{-2}$$

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

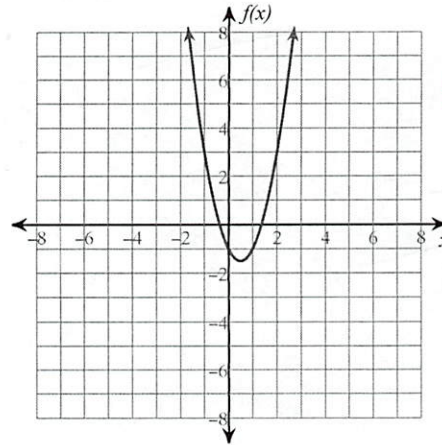
8) $f(x) = 2x^2 - 2x - 1$; $[-1, 2]$



$$\frac{f(1) - f(0)}{1 - 0}$$

$$\frac{3 - 1}{1 - 0}$$

$$= \boxed{2}$$



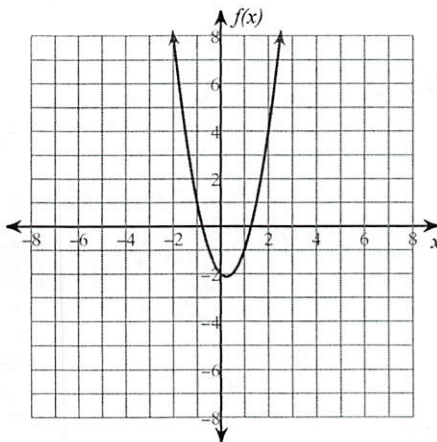
$$\frac{f(2) - f(-1)}{2 - (-1)}$$

$$\frac{3 - 3}{2 + 1}$$

$$= \boxed{0}$$

9) $f(x) = 2x^2 - x - 2$; $[0, 2]$

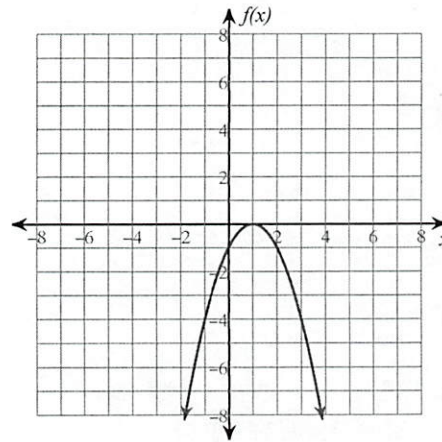
10) $f(x) = -x^2 + 2x - 1$; $[1, 2]$



$$\frac{f(2) - f(0)}{2 - 0}$$

$$\frac{4 - (-2)}{2}$$

$$= \boxed{3}$$



$$\frac{f(2) - f(1)}{2 - 1}$$

$$\frac{-1 - 0}{1}$$

$$= \boxed{-1}$$