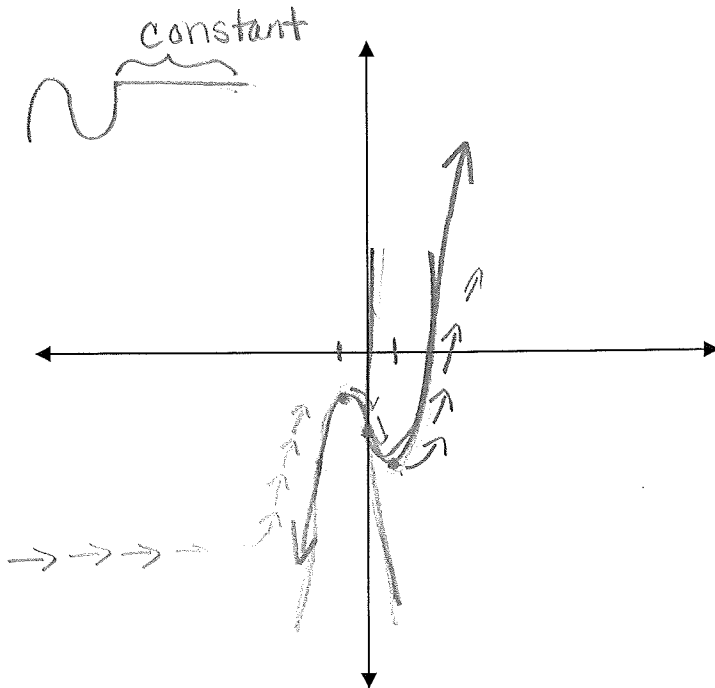


Analyze the following function: $f(x) = x^3 - 2x - 5$



Maximum: -0.82

Minimum: 0.82

Interval increasing: $(-\infty, -0.82) \cup (0.82, \infty)$

Interval decreasing: $(-0.82, 0.82)$

Inflection point: $\frac{-0.82 + 0.82}{2} = 0$

Concave up: $(0, \infty)$

Concave down: $(-\infty, 0)$

Constants: none

Example 5 Analyzing a Graph

Graph the function $f(x) = -2x^3 + 6x^2 - x + 3$

Maximum: 1.91

Minimum: .09

Interval increasing: $(.09, 1.91)$

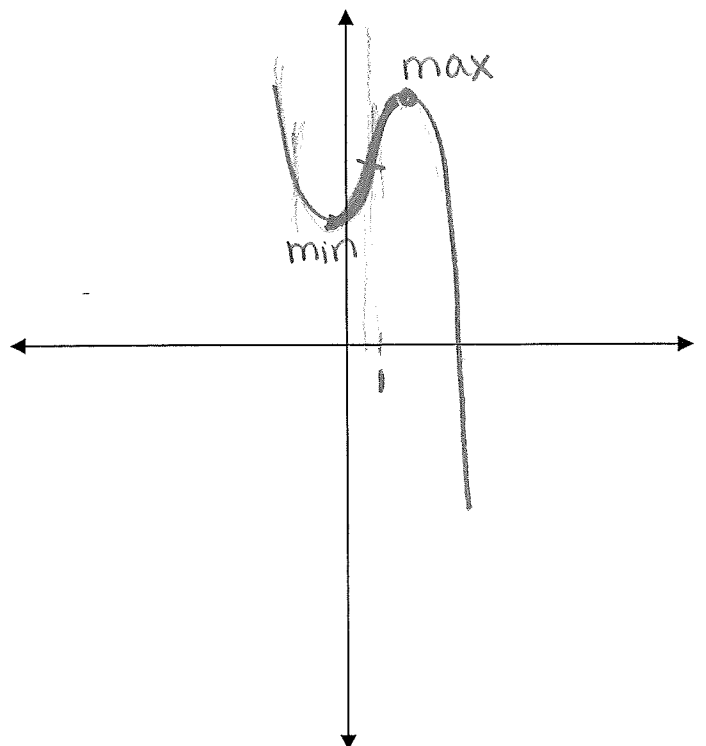
Interval decreasing: $(-\infty, .09) \cup (1.91, \infty)$

Inflection point: 1

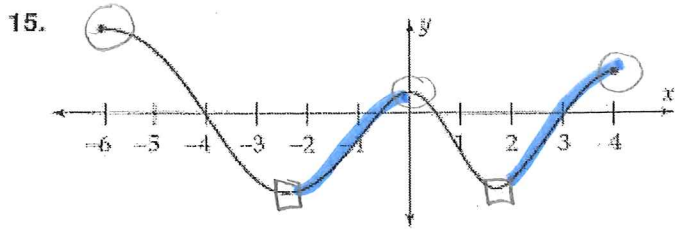
Concave up: $(-\infty, 1)$

Concave down: $(1, \infty)$

Constants: —●—



In Exercises 15 and 16, the graph of a function is shown. Find the approximate intervals on which the function is increasing and on which it is decreasing.

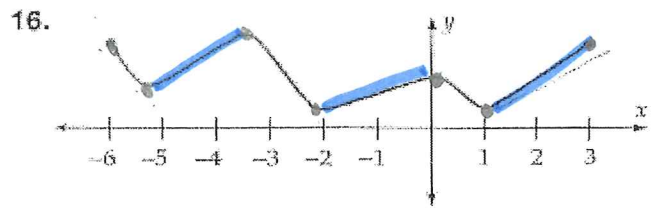


Maximum: -6, 0, 4

Minimum: -2.5, 1.5

Interval increasing: $(-2.5, 0) \cup (1.5, 4)$

Interval decreasing: $(-6, -2.5) \cup (0, 1.5)$



Maximum: -6, -3.5, 0, 3

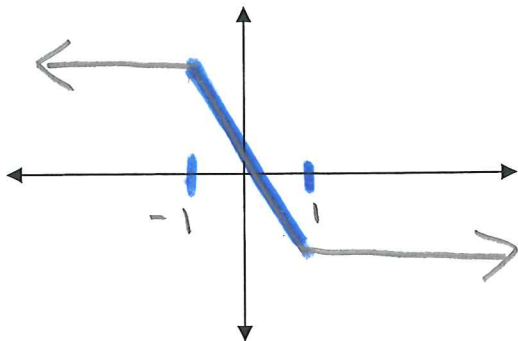
Minimum: -5.5, -2, 1

Interval increasing: $(-5.5, -3.5) \cup (-2, 0) \cup (1, 3)$

Interval decreasing: $(-6, -5.5) \cup (-3.5, -2) \cup (0, 1)$

In Exercises 17–22, graph each function. Find the approximate intervals on which the function is increasing, decreasing, and constant.

17. $f(x) = |x - 1| - |x + 1|$

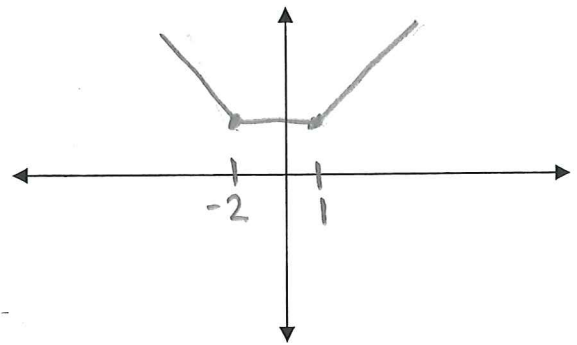


Interval increasing: NONE

Interval decreasing: $(-1, 1)$

Constants: $(-\infty, -1) \cup (1, \infty)$

18. $g(x) = |x - 1| + |x + 2|$



Interval increasing: $(1, \infty)$

Interval decreasing: $(-\infty, -2)$

Constants: $(-2, 1)$