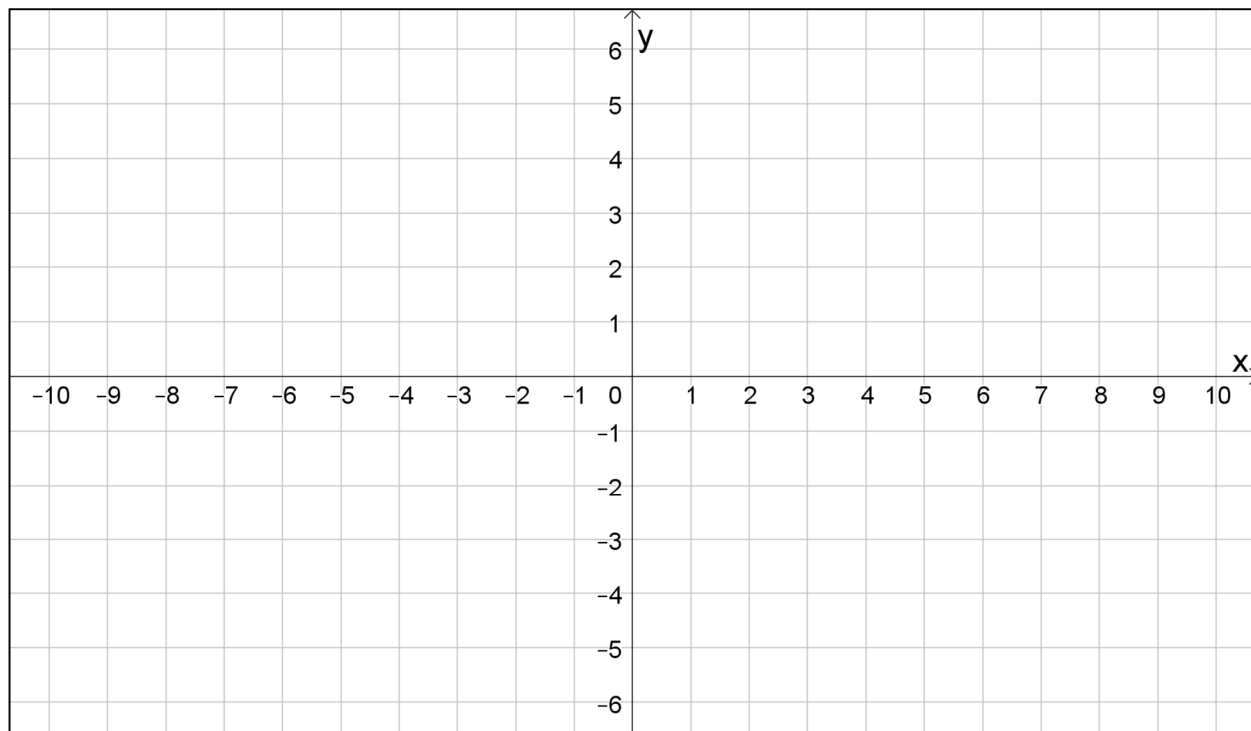
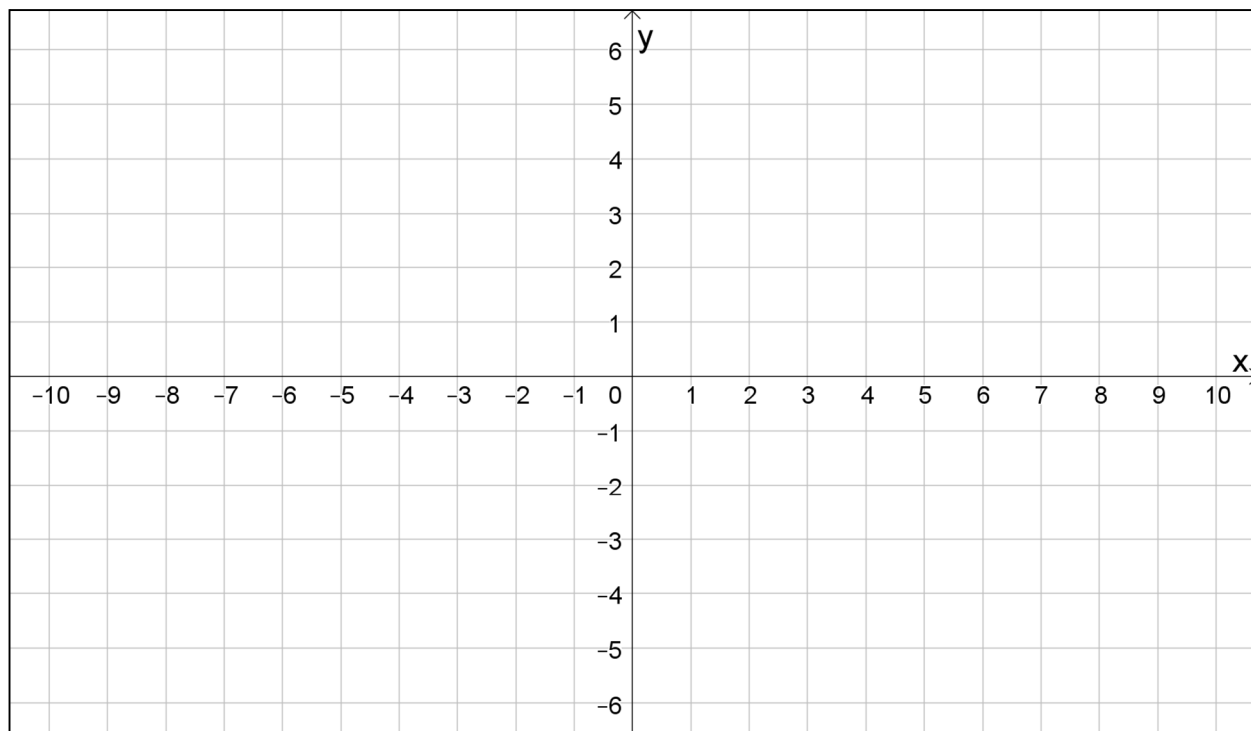


- 1) Graph a function  $y = f(x)$  that has all of the following properties:  $f(1) = 2$ ,  $f(3) = f(-1) = 0$ ,  $f(0) = 4$ ,  $f(x) > 0$  for  $x < -1$ , and  $f(x) < 0$  for  $x > 3$ , domain  $\{x \in \mathbb{R}\}$ , range  $\{y \in \mathbb{R} \mid -4 \leq y \leq 4\}$ .

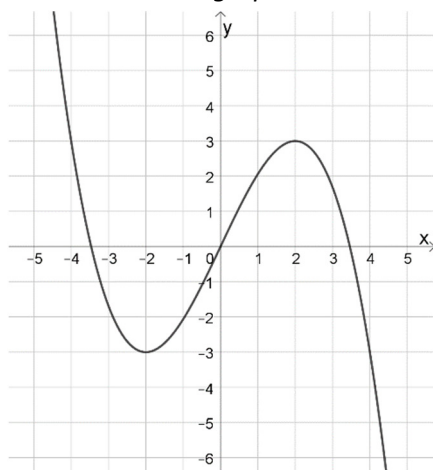


- 2) Graph a function  $y = f(x)$  that has all of the following properties:  $f(-3) = 2$ ,  $f(1) = -1$ , increasing on the intervals  $(-\infty, -3)$  and  $(1, \infty)$ , decreasing on the interval  $-3 < x < 1$ , domain  $\{x \in \mathbb{R}\}$ , range  $\{y \in \mathbb{R}\}$ .



3) For each of the following functions, determine the indicated properties.

a) **FUNCTION:** See graph below



Rough work (if needed):

Domain:

Range:

Intervals of Increase/Decrease:

Absolute Maximum/Minimum Values:

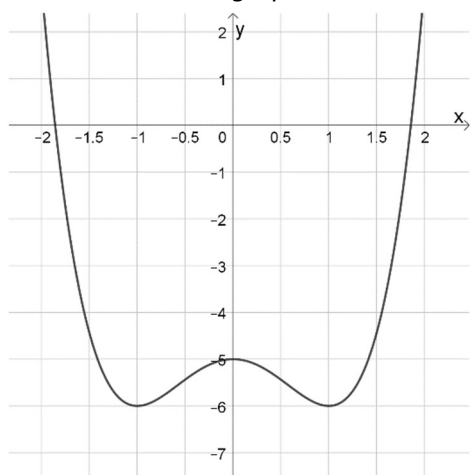
Local Maximum/Minimum Values:

Continuity:

Symmetry:

End Behaviour:

b) **FUNCTION:** See graph below



Rough work (if needed):

Domain:

Range:

Intervals of Increase/Decrease:

Absolute Maximum/Minimum Values:

Local Maximum/Minimum Values:

Continuity:

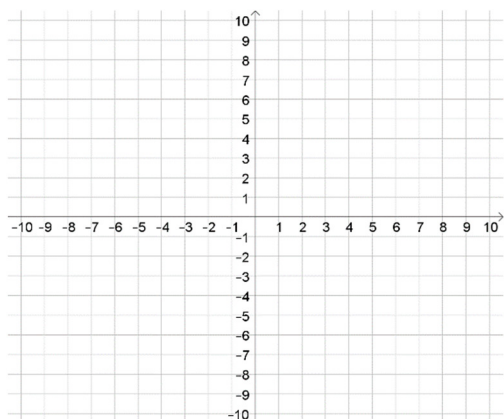
Symmetry:

End Behaviour:

c)

**FUNCTION:**  $y = \frac{1}{x-4} + 3$

Rough work (if needed):



Domain:

Range:

Intervals of Increase/Decrease:

Absolute Maximum/Minimum Values:

Local Maximum/Minimum Values:

Continuity:

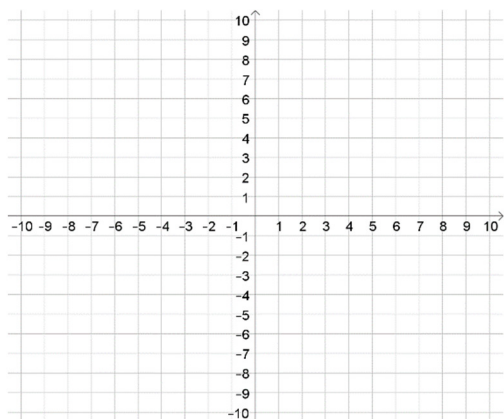
Symmetry:

End Behaviour:

d)

**FUNCTION:**  $f(x) = -2x^2 + 12x + 5$

Rough work (if needed):



Domain:

Range:

Intervals of Increase/Decrease:

Absolute Maximum/Minimum Values:

Local Maximum/Minimum Values:

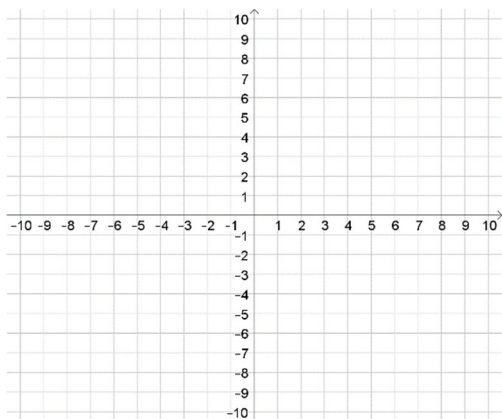
Continuity:

Symmetry:

End Behaviour:

e) **FUNCTION:**  $f(x) = -4|2x| + 8$

Rough work (if needed):



Domain:

Range:

Intervals of Increase/Decrease:

Absolute Maximum/Minimum Values:

Local Maximum/Minimum Values:

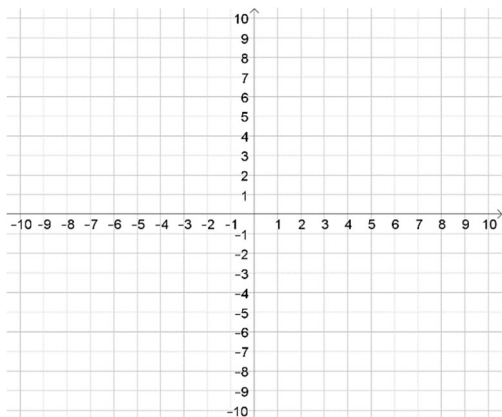
Continuity:

Symmetry:

End Behaviour:

f) **FUNCTION:**  $y = 3^{-x} + 2$

Rough work (if needed):



Domain:

Range:

Intervals of Increase/Decrease:

Absolute Maximum/Minimum Values:

Local Maximum/Minimum Values:

Continuity:

Symmetry:

End Behaviour: