

Coordinate System and Nine Key Features

Directions: Do what it says in each problem.

1. Plot and label each point on the coordinate plane.

a. $A(-4,3)$

b. $B(2,-5)$

c. $C(0,4)$

d. $D(-6,0)$

e. $E(3,2)$

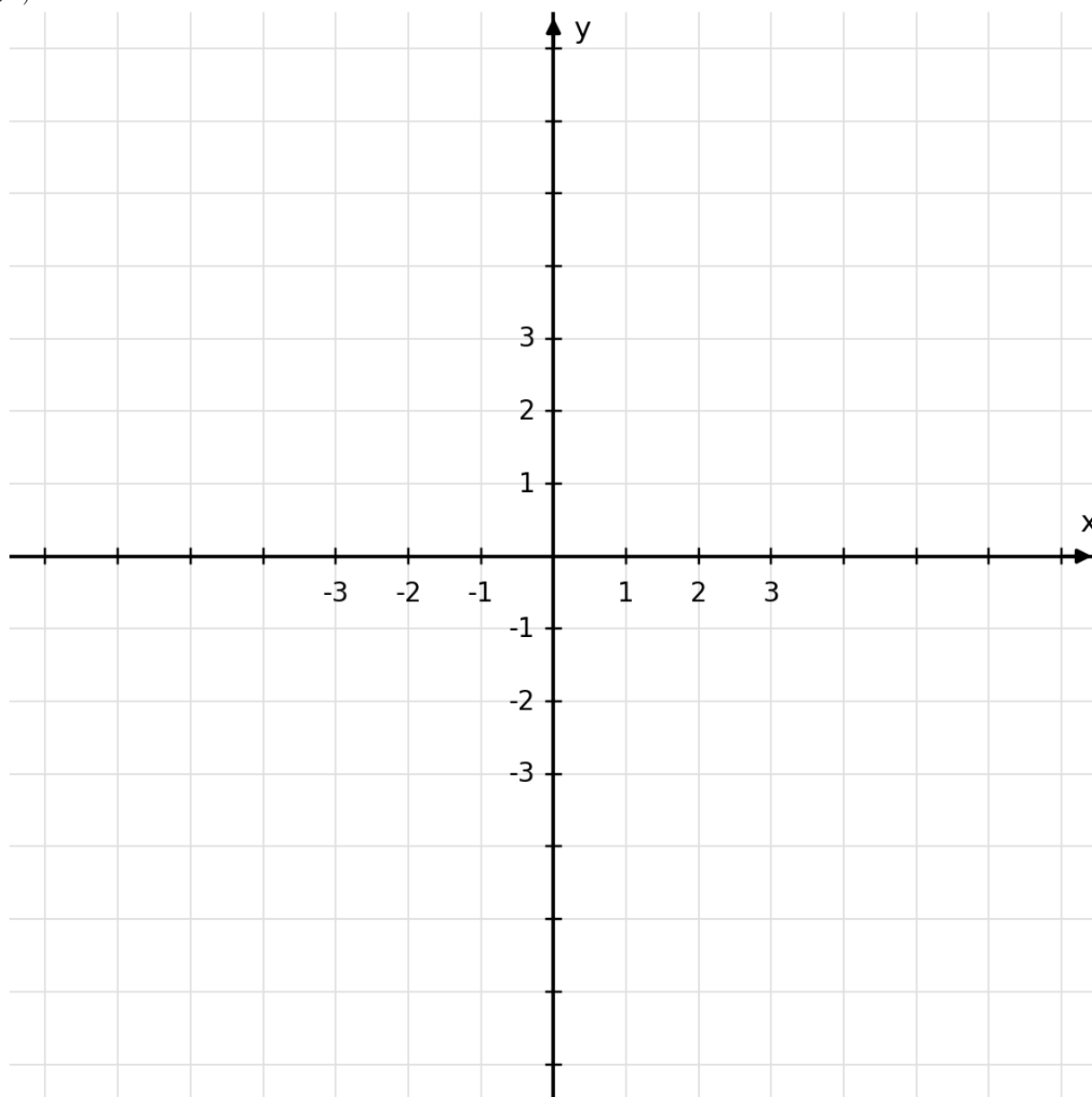
f. $F(-2,-4)$

g. $G(5,0)$

h. $H(0,-3)$

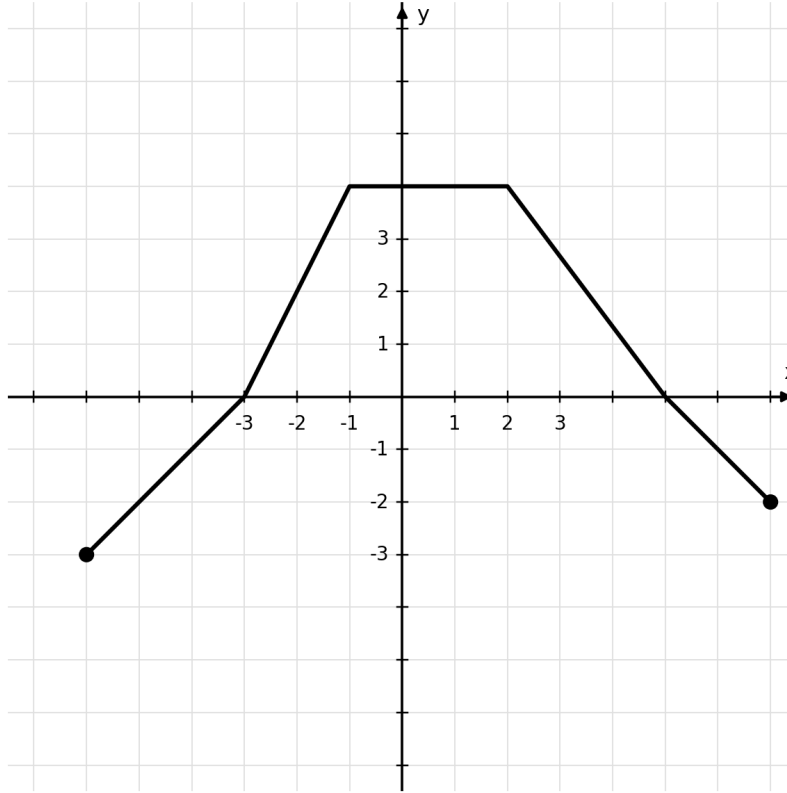
i. $I(1,-1)$

j. $J(-5,5)$



2. For each graph in parts a-h, state all nine key features: domain, range, increasing intervals, decreasing intervals, constant intervals, x-intercepts, y-intercept, absolute maximum value and where it occurs, and absolute minimum value and where it occurs. If a feature does not exist, write none.

a.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

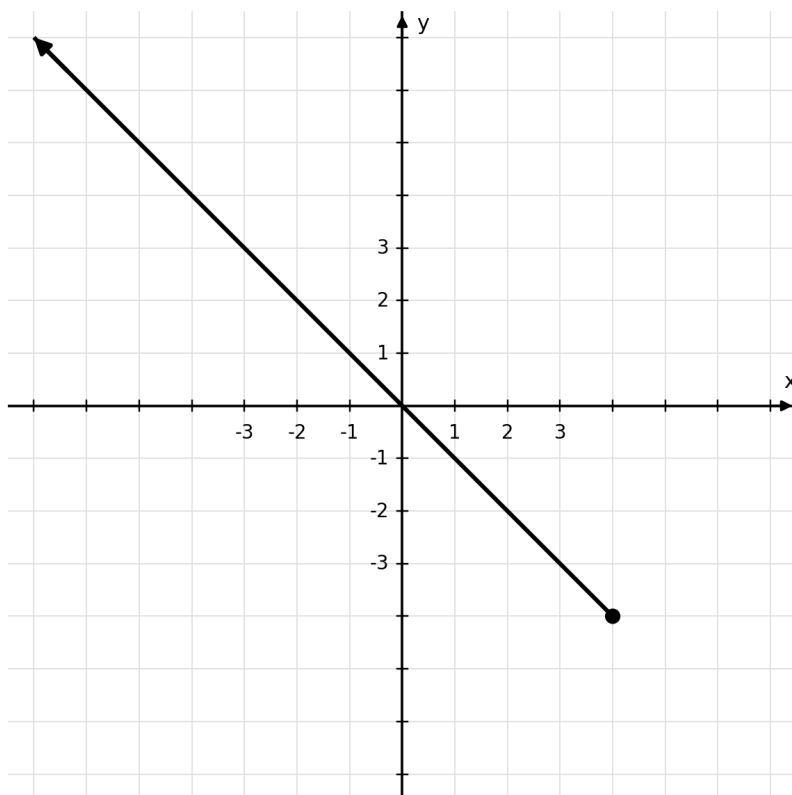
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

b.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

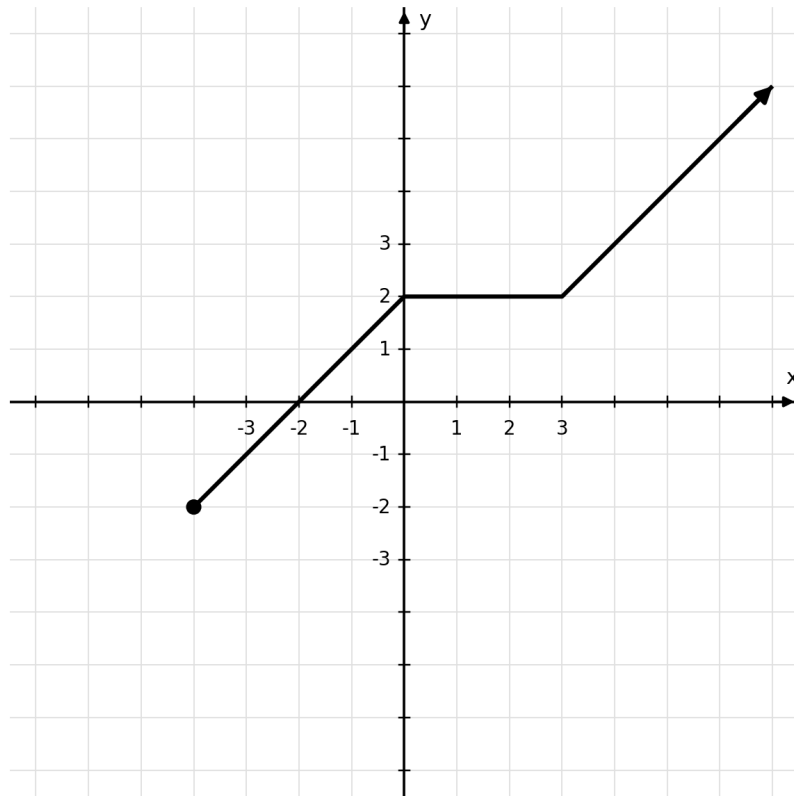
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

c.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

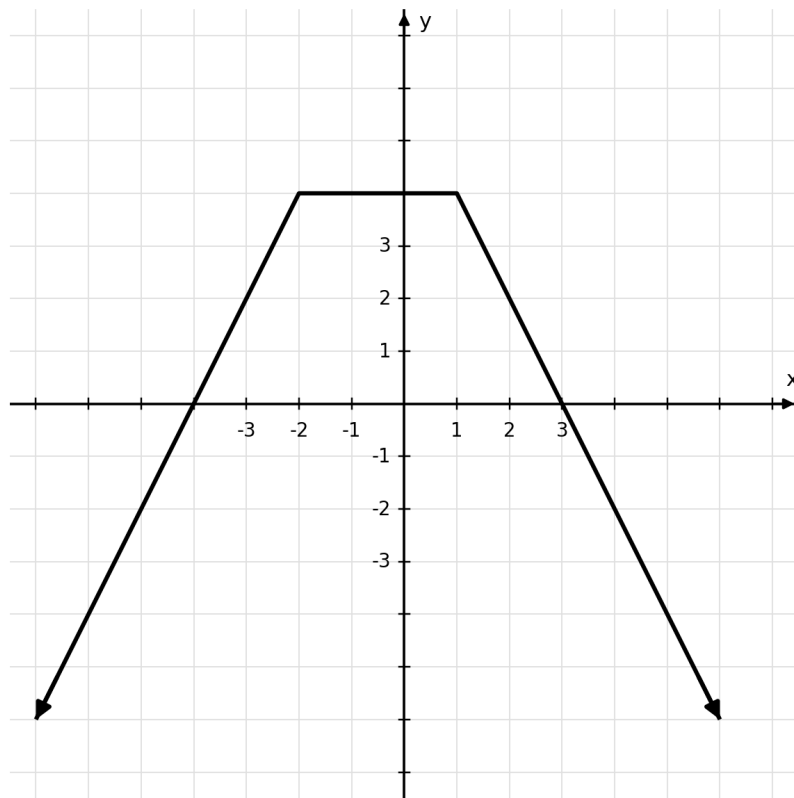
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

d.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

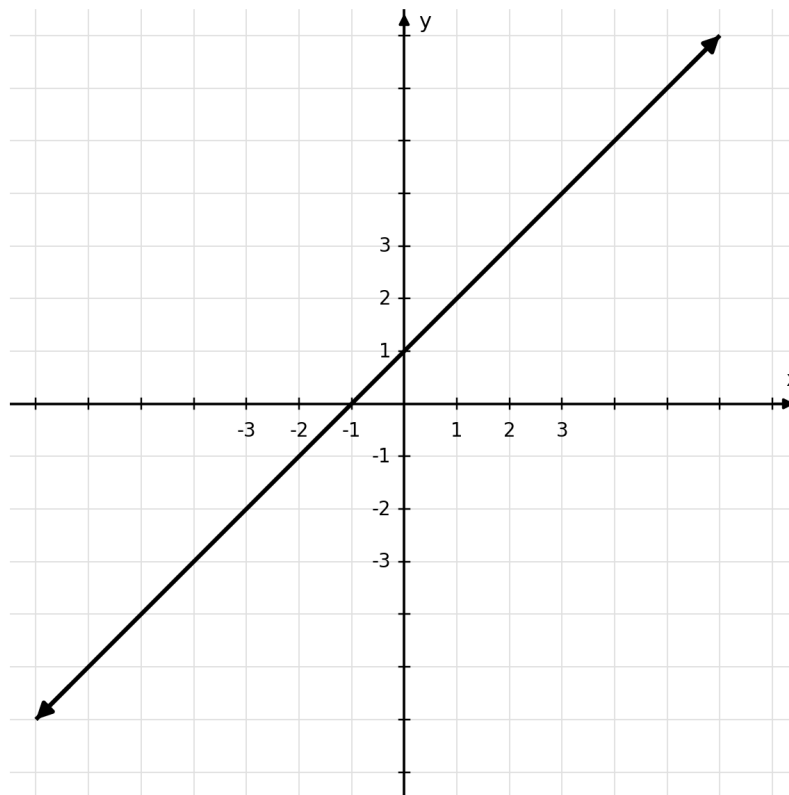
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

e.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

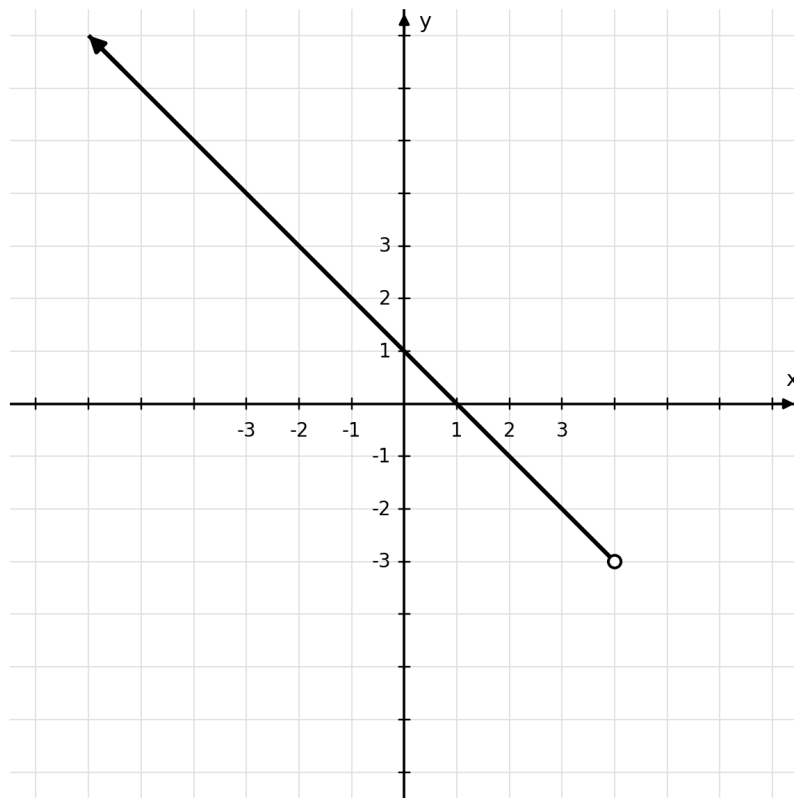
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

f.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

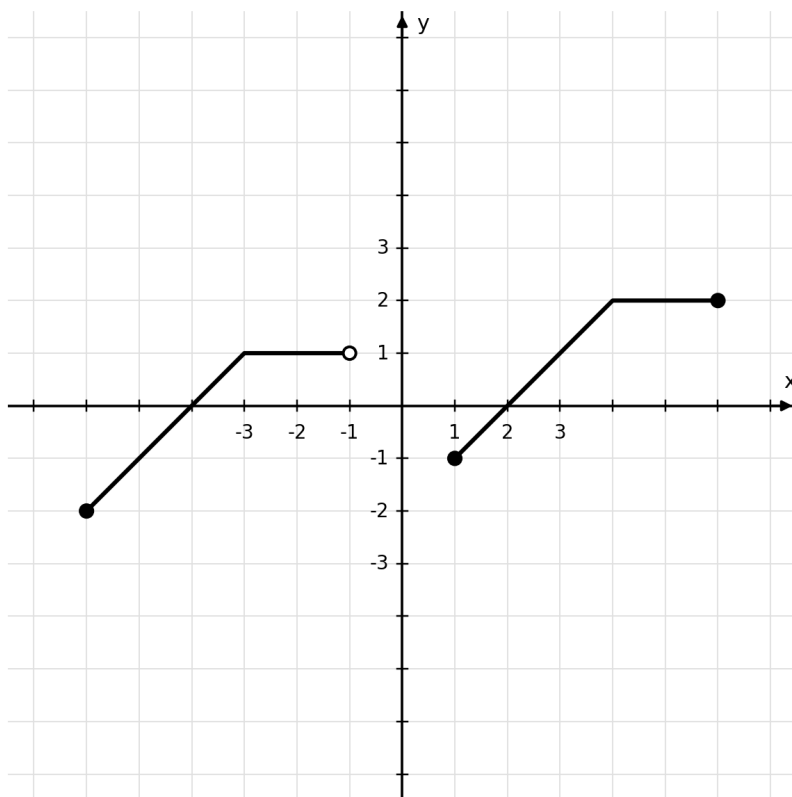
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

g.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

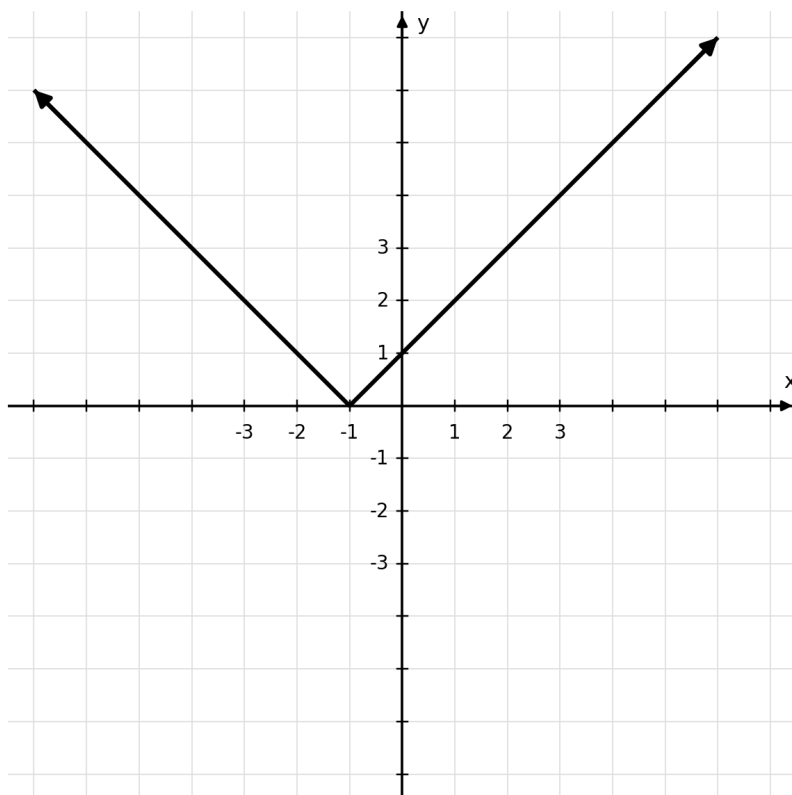
x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

h.



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

Constant: _____

x-intercepts: _____

y-intercept: _____

Absolute maximum value and where it occurs: _____

Absolute minimum value and where it occurs: _____

3. For each set of constraints in parts a-d, draw one function that satisfies all of the constraints. More than one answer may be possible.

a.

Domain: $[-6, 6]$

Range: $[-2, 5]$

Increasing: $(-6, -1)$

Constant: $(-1, 2)$

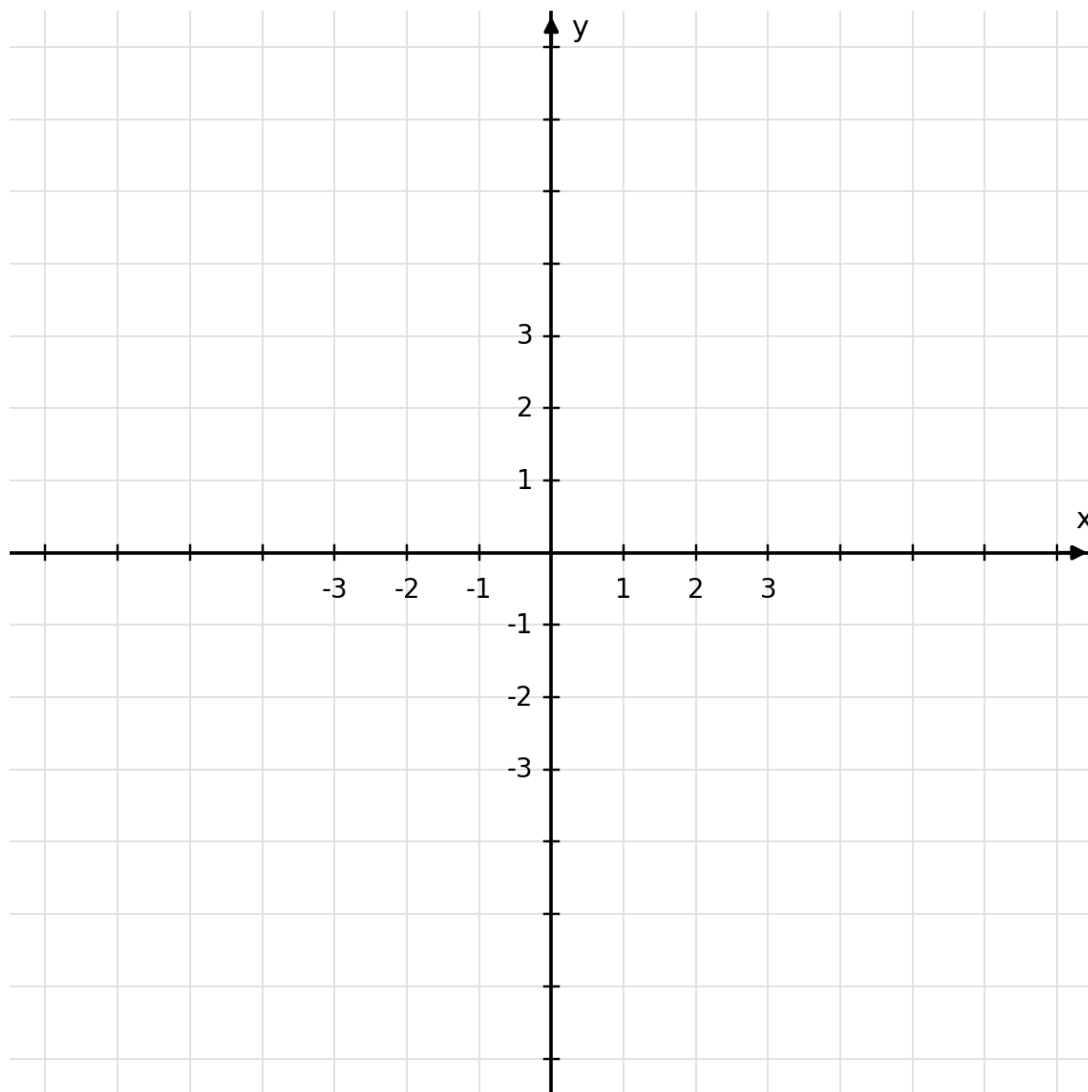
Decreasing: $(2, 6)$

x-intercepts: two

y-intercept: one

Absolute maximum: 5

Absolute minimum: -2



b.

Domain: $(-\infty, 4]$

Range: $[-3, \infty)$

Increasing: none

Decreasing: $(-\infty, 4)$

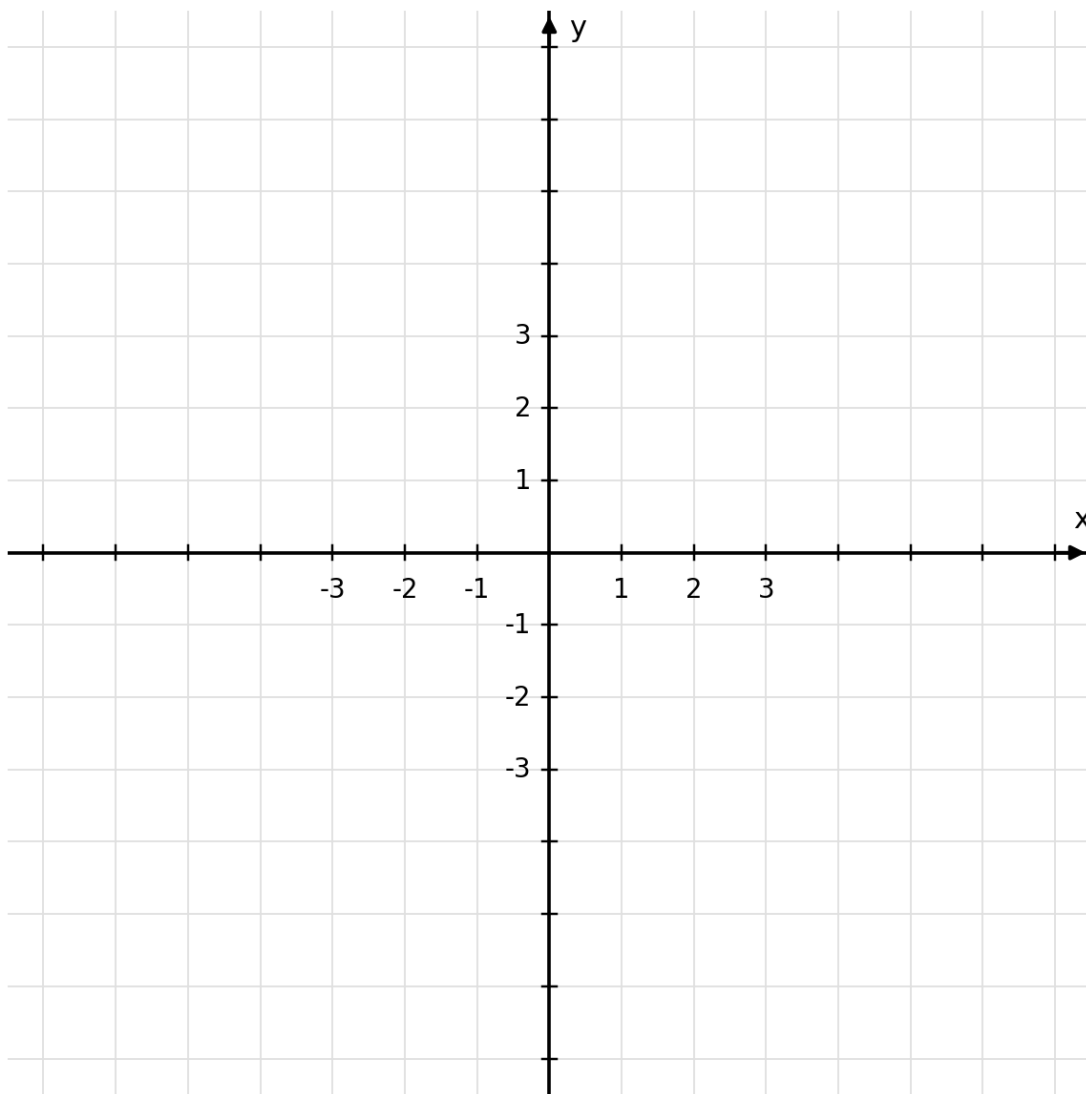
Constant: none

x-intercepts: one

y-intercept: one

Absolute maximum: none

Absolute minimum: -3



c.

Domain: $[-3, \infty)$

Range: $[1, \infty)$

Increasing: $(2, \infty)$

Decreasing: none

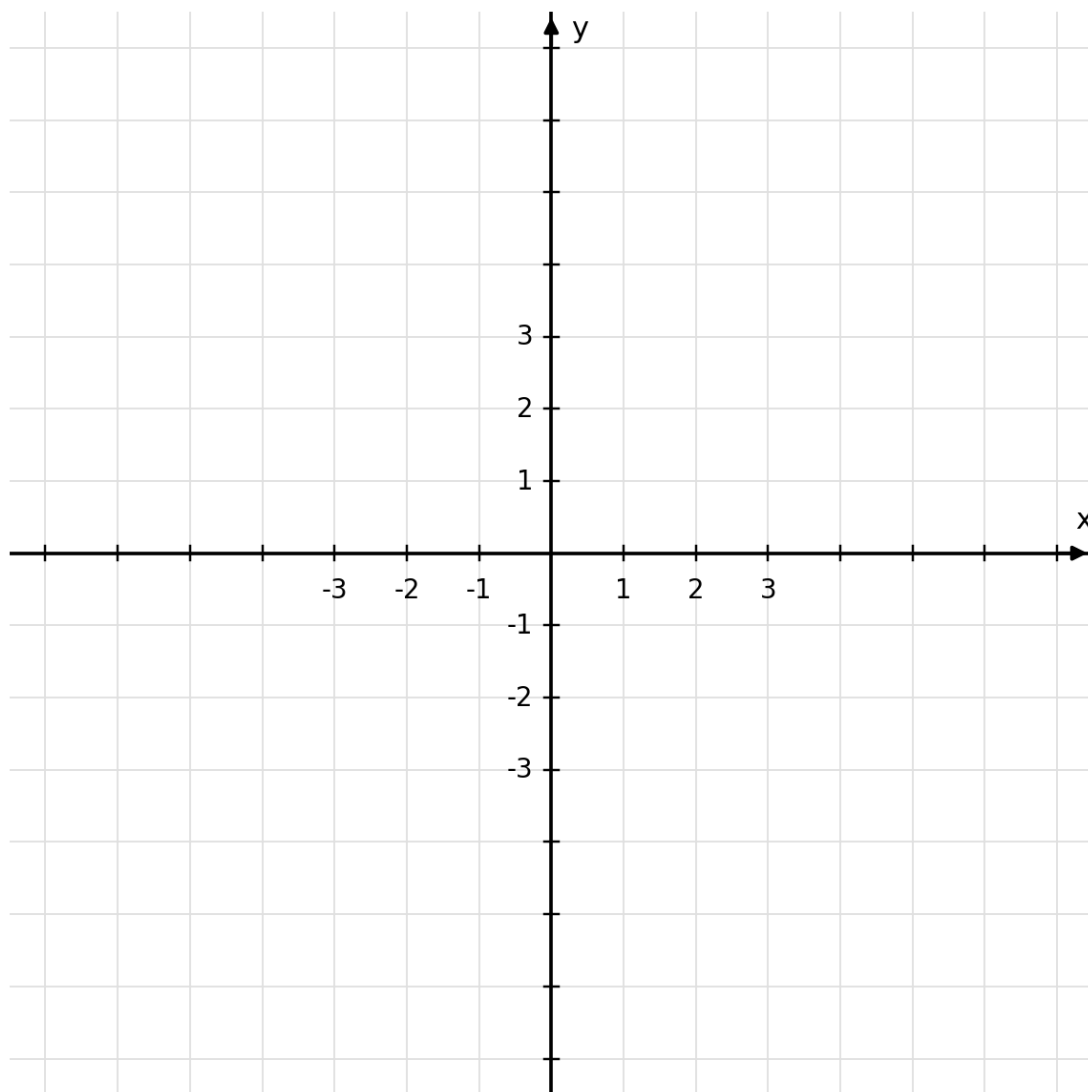
Constant: $(-3, 2)$

x-intercepts: none

y-intercept: one

Absolute maximum: none

Absolute minimum: 1



d.

Domain: $(-\infty, \infty)$

Range: $(-\infty, 4]$

Increasing: $(-\infty, -2)$

Decreasing: $(1, \infty)$

Constant: $(-2, 1)$

x-intercepts: two

y-intercept: one

Absolute maximum: 4

Absolute minimum: none

