

Functions (Part 2): Domain and Range

Section 1: Domain and range from a graph (KA link)

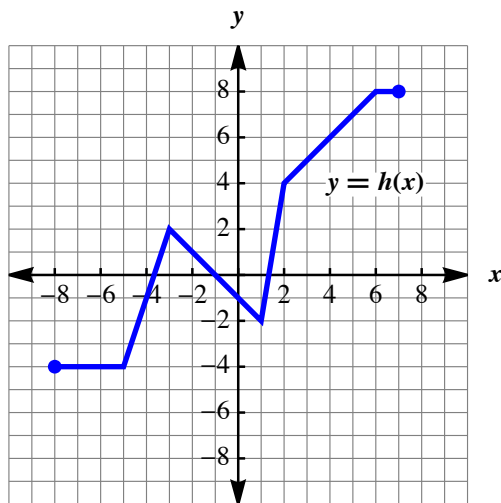
1. State, in interval notation,

a. The domain of h .

$[-8, 7]$

b. The range of h .

$[-4, 8]$



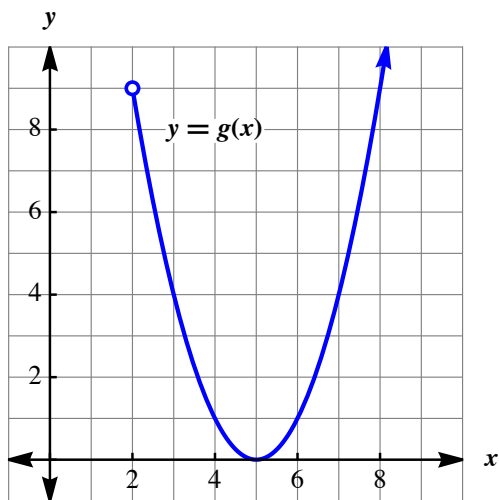
2. [Challenge] State, in interval notation,

a. The domain of g .

$(2, \infty)$

b. The range of g .

$[0, \infty)$

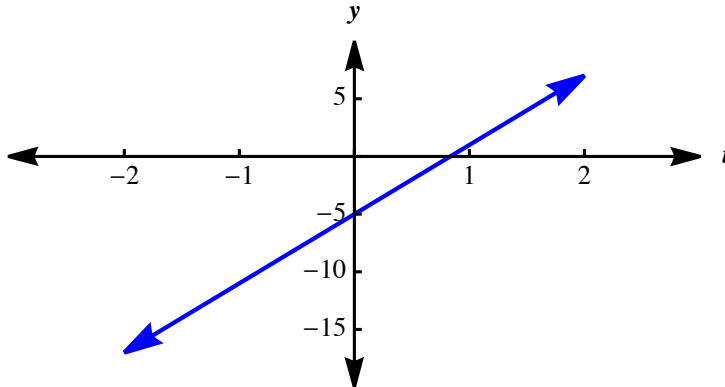


Section 2: Determine the domain of functions (KA link)

1. State the domain of the following functions using interval notation:

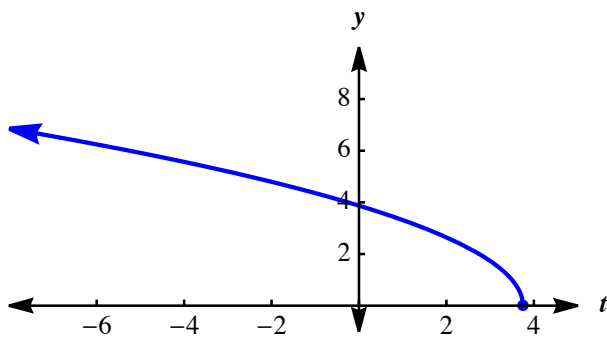
a. $f(t) = 6t - 5$

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



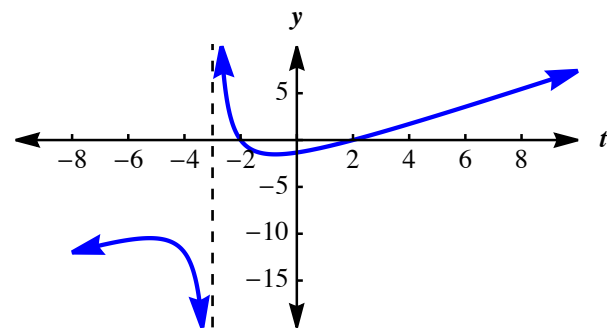
b. $g(x) = \sqrt{15 - 4x}$

Domain: $(-\infty, 15/4]$



c. $h(r) = \frac{r^2 - 4}{r + 3}$

Domain: $(-\infty, -3) \cup (-3, \infty)$



2. [Challenge] State the domain of the following functions using interval notation:

a. $f(x) = mx + b$

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

b. $g(x) = \sqrt{x^2 - 4}$

$$x^2 - 4 \geq 0$$

$$x^2 \geq 4$$

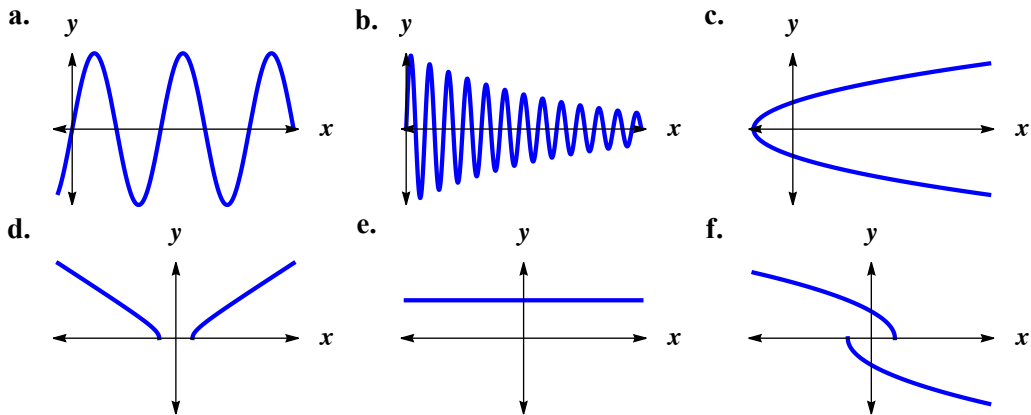
$$\pm x \geq 2 \implies x \geq 2 \text{ and } x \leq -2$$

$$\text{Domain: } (-\infty, -2] \cup [2, \infty)$$

Section 3: Recognize functions from graphs (KA link)

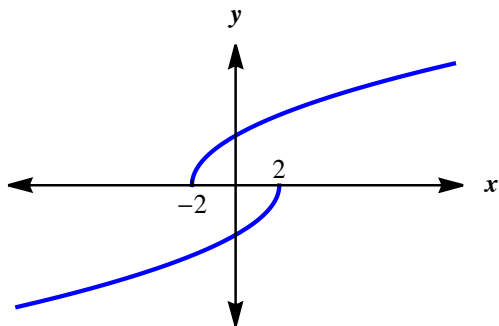
1. Which of the following graphs represent a function?

a, b, d, and e are functions.



1. [Challenge] Restrict the domain of the following graph so that it represents a function (write the domain using interval notation).

$$(-\infty, -2) \cup (2, \infty)$$



Section 4: Recognize functions from tables (KA link)

1. Make as few changes as possible to the table below so the weight of person (in lbs) is a function of their height (in inches).

Option #1: For first height = 58, change weight from 110 to 112

Option #2: For second height = 58, change weight from 112 to 110

| Height | Weight |
|--------|--------|
| 60 | 105 |
| 72 | 180 |
| 58 | 110 |
| 74 | 180 |
| 59 | 103 |
| 58 | 112 |
| 72 | 180 |
| 67 | 159 |