

Name: Key

Block: _____

This means
find the
value of
the function
when $x = 3$

1. Given the function $f(x) = 2x + 4$ a) Determine $f(3)$

$$\begin{aligned} f(x) &= 2x + 4 \\ f(3) &= 2(3) + 4 \\ &= 6 + 4 \\ &= \boxed{10} \end{aligned}$$

b) Determine $f(-5)$

$$\begin{aligned} f(x) &= 2x + 4 \\ f(-5) &= 2(-5) + 4 \\ &= -10 + 4 \\ &= \boxed{-6} \end{aligned}$$

c) Determine the value of x when $f(x) = 18$

When the value of the
function is 18
or $f(x) = y$ so when
 $y = 18$, find the
value of x

$$\begin{aligned} f(x) &= 2x + 4 \\ 18 &= 2x + 4 \\ +4 & \quad +4 \\ \hline 22 &= 2x \\ \frac{22}{2} & \quad \frac{2x}{2} \\ \boxed{11} &= x \end{aligned}$$

$$\begin{aligned} \text{or: } y &= 2x + 4 \\ 18 &= 2x + 4 \end{aligned}$$

2. The function $C(i) = 2.54i$ converts a measurement of i inches to a measurement of C centimetres.a) Determine the value of $C(12)$. What does this number represent?

$$\begin{aligned} C(i) &= 2.54i \\ C(12) &= 2.54(12) \\ &= \boxed{30.48} \end{aligned}$$

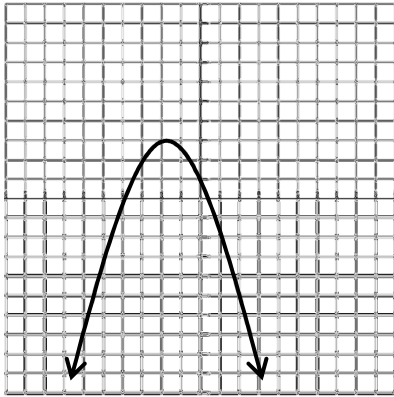
b) Determine the value of i when $C(i) = 100$. What does this number represent?

$$\begin{aligned} C(i) &= 2.54i \\ 100 &= 2.54i \\ \hline 2.54 & \quad 2.54 \\ \boxed{39.37} &= i \end{aligned}$$

In purple - using inequalities

In red - using interval notation

3. Determine the following properties of the graphs given.

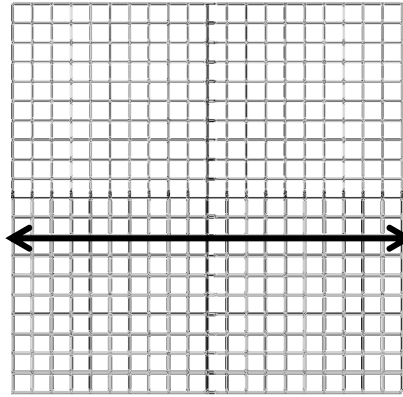


Domain: $x \in \mathbb{R}$ $(-\infty, \infty)$

Range: $y \leq 3$ $(-\infty, 3]$

Is it a function? Yes No

Reason: Vertical line test (VLT)

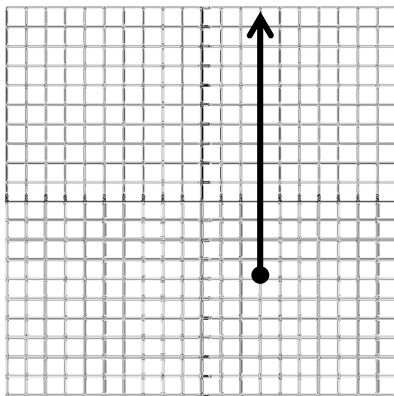


Domain: $x \in \mathbb{R}$ $(-\infty, \infty)$

Range: $y = -2$

Is it a function? Yes No

Reason: VLT

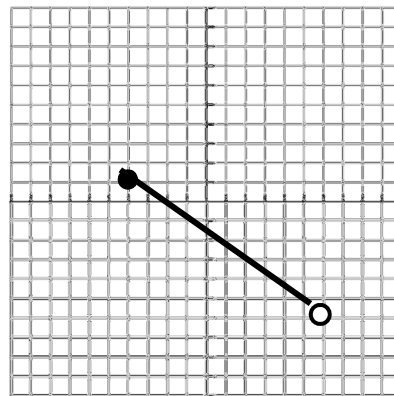


Domain: $x = 3$

Range: $y \geq -4$ $(-4, \infty)$

Is it a function? Yes No

Reason: You can draw a vertical line that will touch more than one point on the graph.

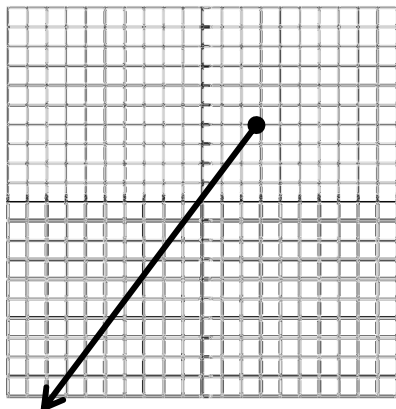


Domain: $-4 \leq x < 6$ $[-4, 6)$

Range: $-6 \leq y \leq 1$ $(-6, 1]$

Is it a function? Yes No

Reason: VLT

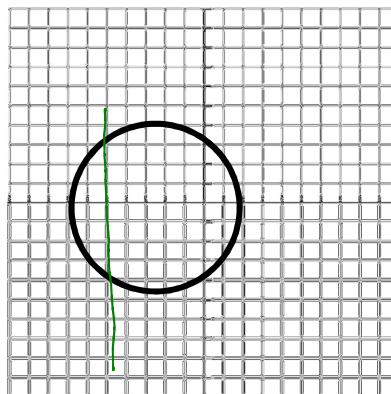


Domain: $x \leq 3$ $(-\infty, 3]$

Range: $y \leq 4$ $(-\infty, 4]$

Is it a function? Yes No

Reason: VLT

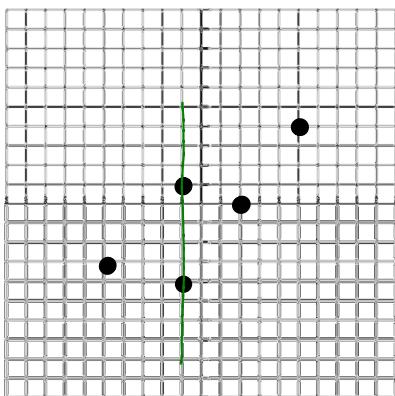


Domain: $-7 \leq x \leq 2$ $[-7, 2]$

Range: $-5 \leq y \leq 4$ $[-5, 4]$

Is it a function? Yes No

Reason: VLT - hits more than one point

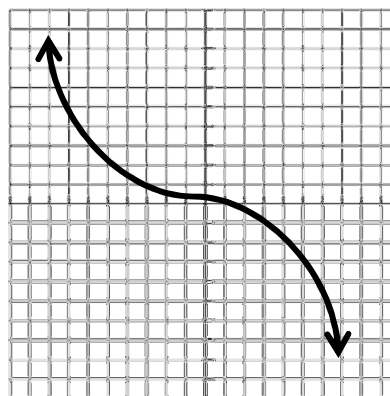


Domain: $\{-5, -1, 2, 5\}$

Range: $\{-4, -3, 0, 1, 4\}$

Is it a function? Yes No

Reason: VLT - hits more than one point



Domain: $x \in \mathbb{R}$ $(-\infty, \infty)$

Range: $y \in \mathbb{R}$ $(-\infty, \infty)$

Is it a function? Yes No

Reason: VLT

4. Given the following relations, determine the domain, range and whether or not it is a function.

a) $\{(2, 3), (-4, 5), (0, 8), (4, 2)\}$

Domain: $\{2, -4, 0, 4\}$

Range: $\{3, 5, 8, 2\}$

Is it a function? Yes No

Reason: All x -values are unique

b) $\{(-1, 8), (0, 7), (3, 4), (-1, 3)\}$

Domain: $\{-1, 0, 3\}$

Range: $\{3, 4, 7, 8\}$

Is it a function? Yes No

Reason: Two x values are the same.

a) $\{(0, -2), (3, 5), (-4, -6), (3, 7)\}$

Domain: $\{-4, 0, 3\}$

Range: $\{-6, -2, 5, 7\}$

Is it a function? Yes No

Reason: Two x -values are the same.

d) $\{(-2, 4), (-1, 1), (1, 1), (2, 4)\}$

Domain: $\{-2, -1, 1, 2\}$

Range: $\{1, 4\}$

Is it a function? Yes No

Reason: All x -values are unique.

5. Given the following graph of $y=f(x)$,

a) Find the value of $f(1)$.

$f(x)$
when $x=1$, $y=-3$

b) Find the value of x when $f(x)=3$

$y=3$
when $y=3$, $x=-2$

