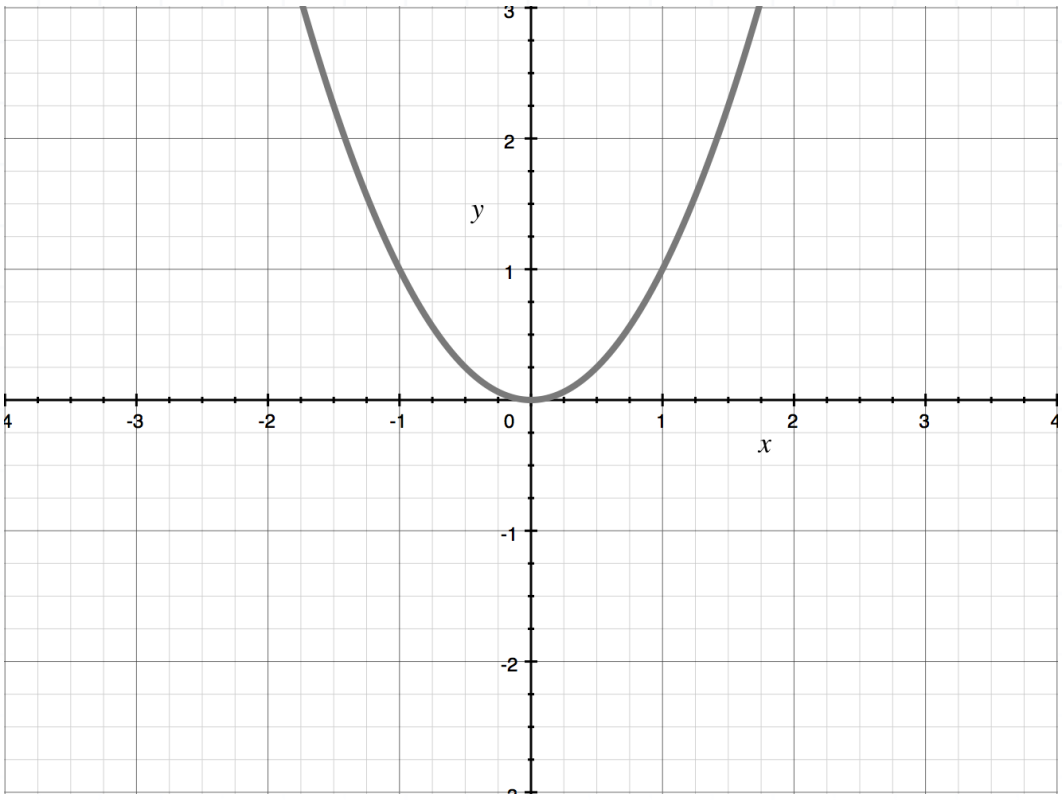
Topic: Domain and range from a graph

Question: What is the domain and range of the function? Assume the graph does not extend beyond the graph shown.



Answer choices:

A $-1\frac{3}{4} \le x \le 1\frac{3}{4}$ $0 \le y \le -3$

B $0 \le x \le 3$ $-1\frac{3}{4} \le y \le 1\frac{3}{4}$

C $0 \le x \le -3$ $-1\frac{3}{4} \le y \le 1\frac{3}{4}$

D $-1\frac{3}{4} \le x \le 1\frac{3}{4}$ $0 \le y \le 3$

Solution: D

To solve for the domain of the function on the graph, look at the graph from left to right. The first x-value that exists for the function is at

$$x = -1\frac{3}{4}$$

then the function continues smoothly until it ends at

$$x = 1\frac{3}{4}$$

This means the domain of the function is

$$-1\frac{3}{4} \leq x \leq 1\frac{3}{4}$$

To solve for the range of the function on the graph, look at the graph from bottom to top. The first y-value that exists for the function is at $y = 0$, then the function continues smoothly until it ends at $y = 3$. This means the range of the function is $0 \leq y \leq 3$.

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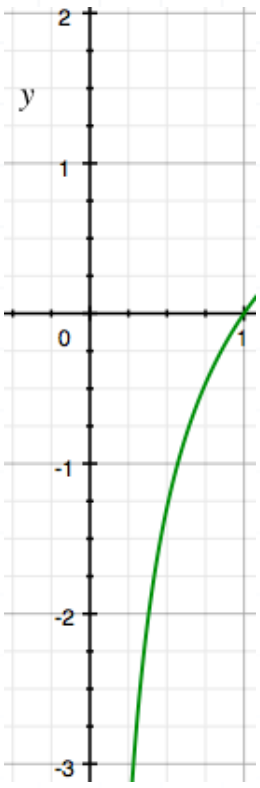

Answer choices:

A $-3 \leq x \leq 0$ $\frac{1}{4} \leq y \leq 1$

B $\frac{1}{4} \leq x \leq 1$ $0 \leq y \leq 3$

C $\frac{1}{4} \leq x \leq 1$ $-3 \leq y \leq 0$

D $0 \leq x \leq 3$ $\frac{1}{4} \leq y \leq 1$

Solution: C

To solve for the domain of the function on the graph, look at the graph from left to right. The first x-value that exists for the function is at $x = 1/4$, then the function continues smoothly until it ends at $x = 1$. This means the domain of the function is

$$\frac{1}{4} \leq x \leq 1$$

To solve for the range of the function on the graph, look at the graph from bottom to top. The first y-value that exists for the function is at $y = -3$, then the function continues smoothly until it ends at $y = 0$. This means the range of the function is $-3 \leq y \leq 0$.