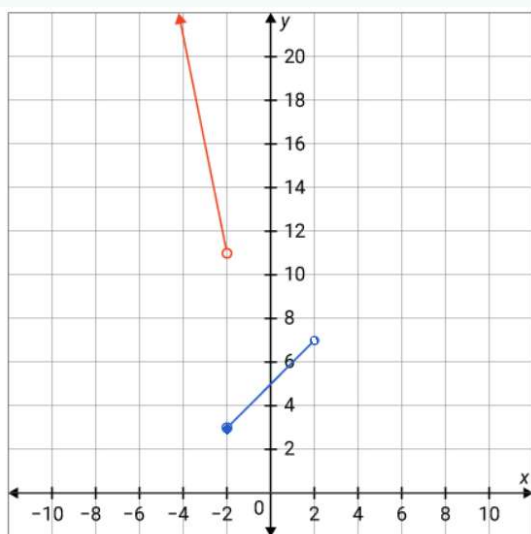
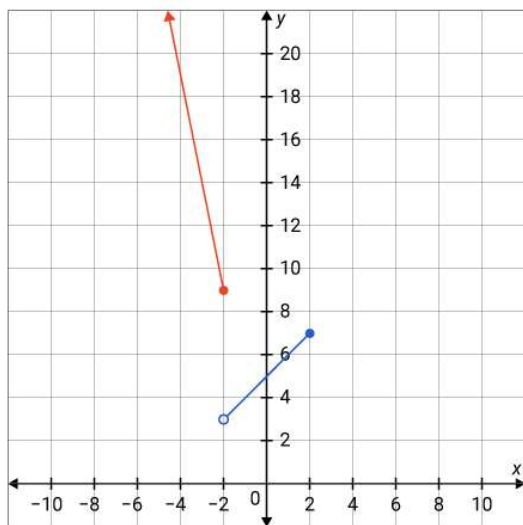
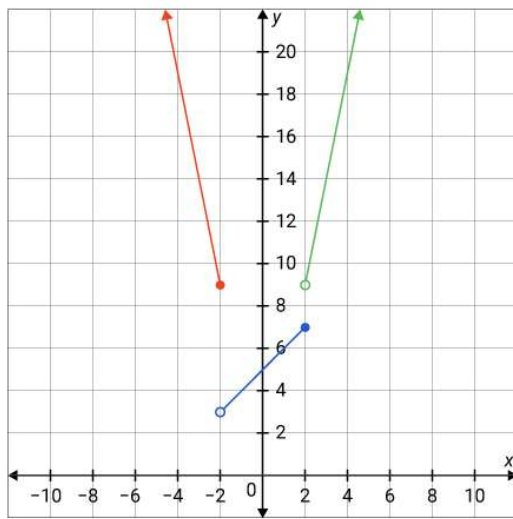
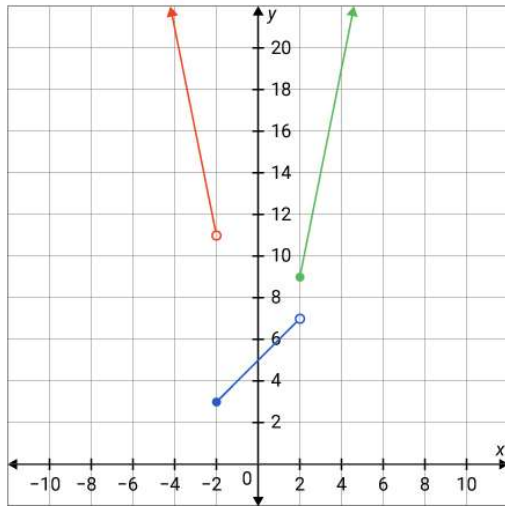
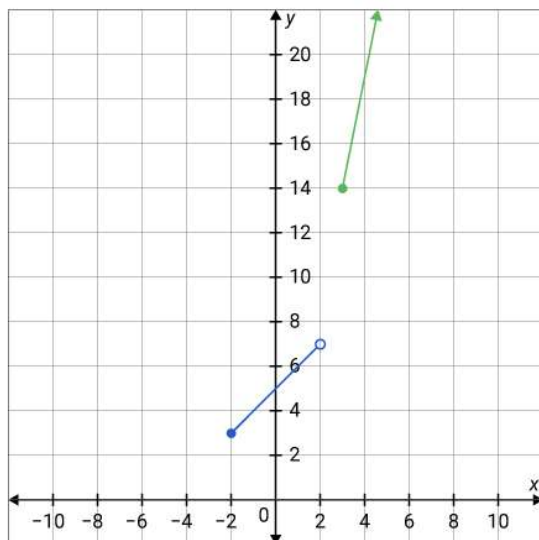


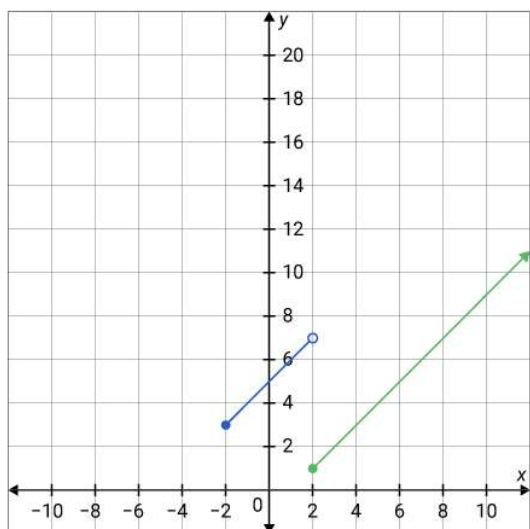
QUESTION 1

Which graphs show parts of the graph of this function?

$$f(x) = \begin{cases} -5x + 1 & \text{if } x < -2 \\ x + 5 & \text{if } -2 \leq x < 2 \\ 5x - 1 & \text{if } x \geq 2 \end{cases}$$







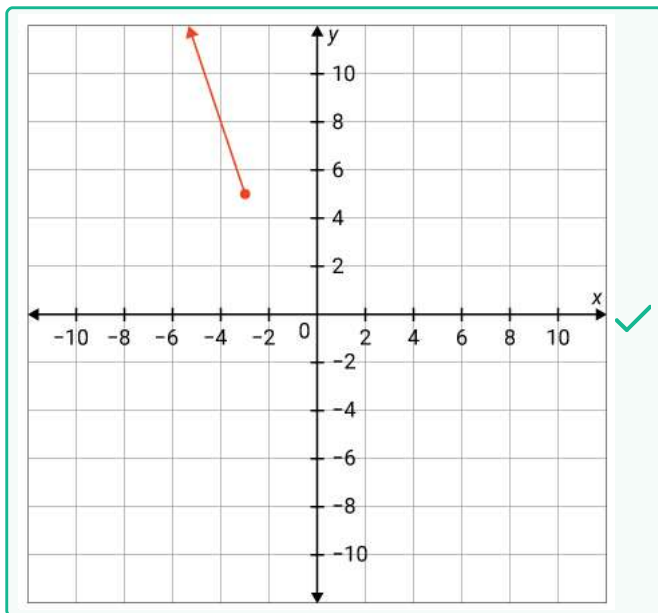
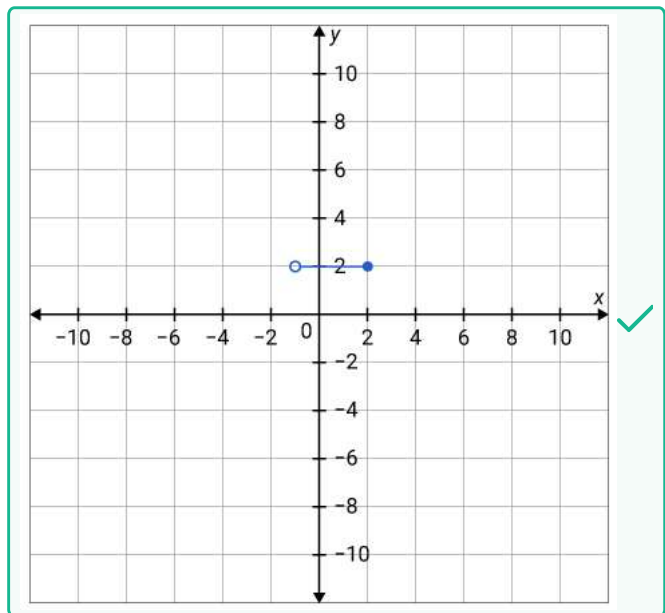
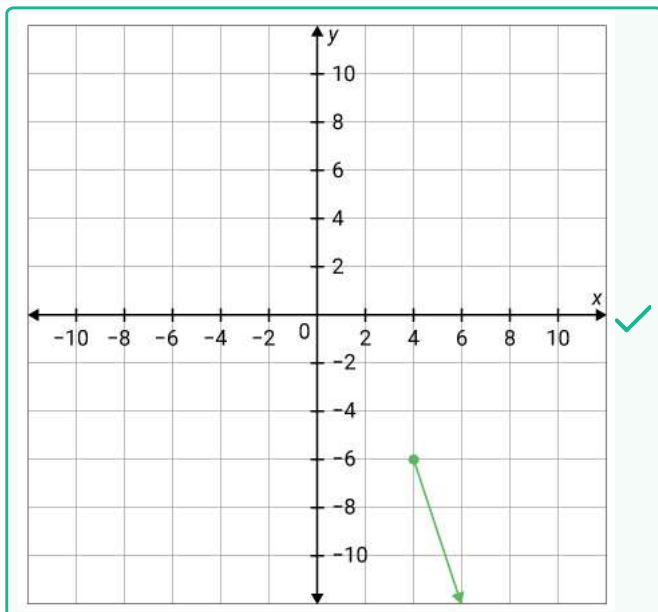
QUESTION 2

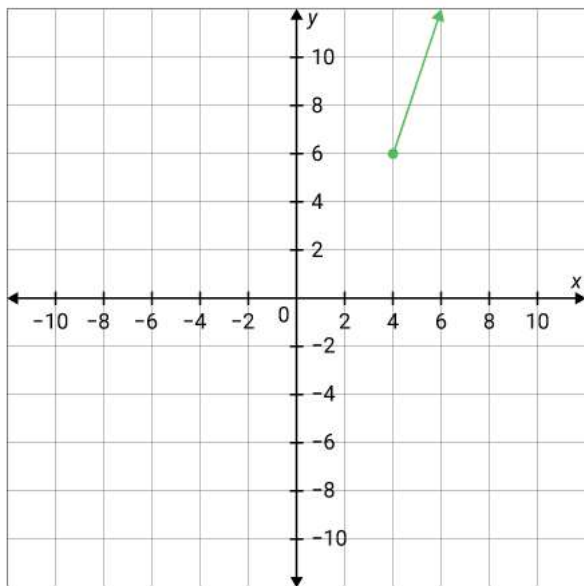
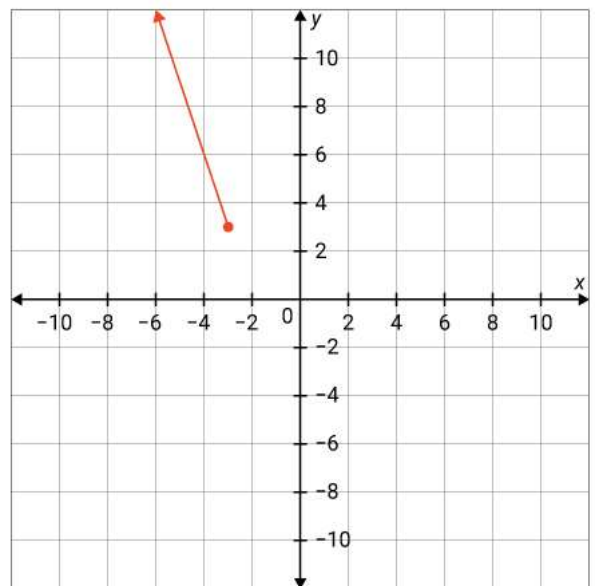
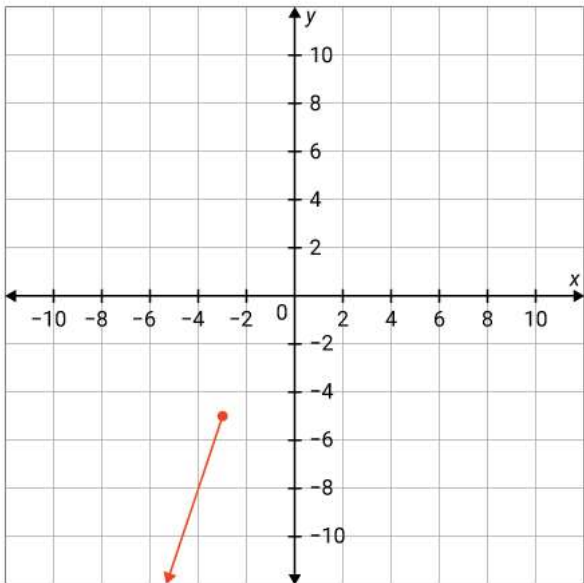
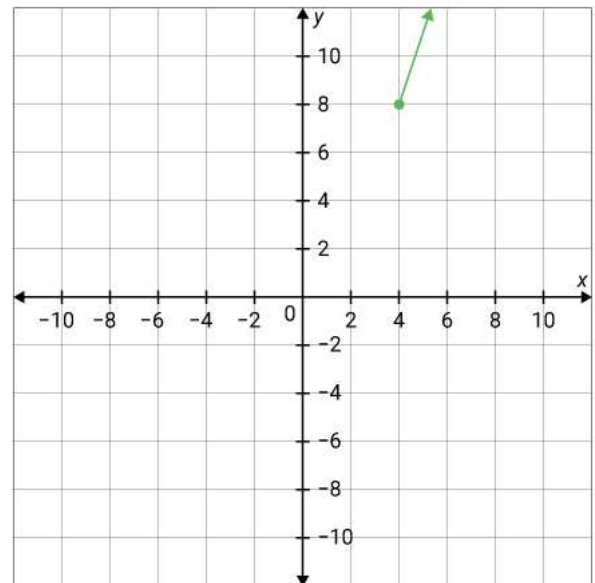


Complete the graph of the function

$$f(x) = \begin{cases} -3x - 4 & \text{if } x \leq -3 \\ 2 & \text{if } -1 < x \leq 2 \\ -3x + 6 & \text{if } x \geq 4 \end{cases}$$

Drag and drop your answers to correctly complete the graph of $f(x)$





QUESTION 3



What is the range of this function?

$$f(x) = \begin{cases} -\frac{1}{2}x^2 - 4 & \text{if } x < -2 \\ \frac{1}{4}x^2 - 2 & \text{if } x \geq 4 \end{cases}$$

Select the correct answer from the drop-down menu.

The range is $\{f(x) / f(x) < -6\} \cup \{f(x) / f(x) \geq 2\}$ ✓ ▼

QUESTION 4

Ismael is training for a bike race for the next 20 weeks. In the first 4 weeks of training, he bikes 40 km each week. Each week thereafter, he adds 6 km to his training.

Identify the piecewise-defined function for the kilometers Ishmael bikes during

x

weeks of his training.

Drag and drop your answers to correctly complete the piecewise-defined function.

$f(x) = \{$

$40x$ ✓

if

1 ✓

$\leq x \leq$

4 ✓

$40x + 6(x - 4)$ ✓

if

$4 < x \leq$

20 ✓

$40 + 6(x - 4)$

6

x

$x + 40$

QUESTION 5

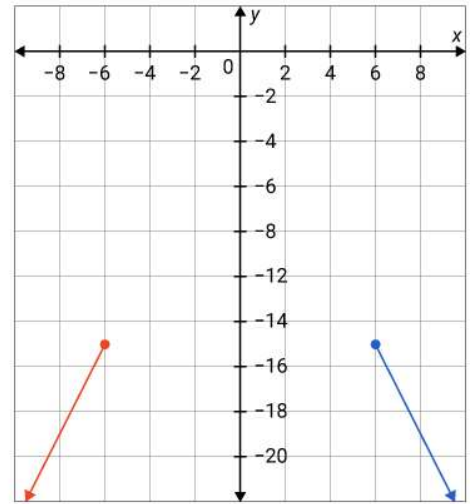
Identify the domain and range of the function

$$f(x) = \begin{cases} 2x - 3 & \text{if } x \leq -6 \\ -2x - 3 & \text{if } x \geq 6 \end{cases}$$

Select the correct answers from the drop-down menus.

Domain: $\{x / x \leq -6 \text{ or } x \geq 6\}$ ✓ ▼

Range: $\{f(x) / f(x) \leq -15\}$ ✓ ▼

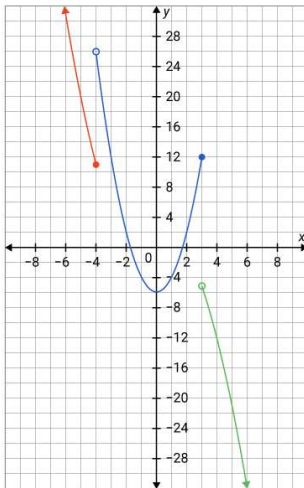
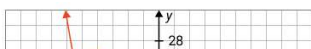


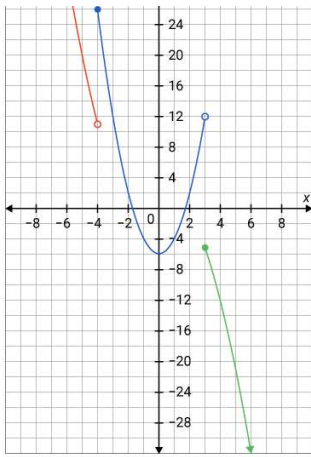
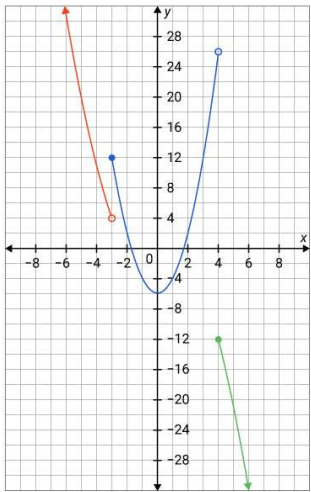
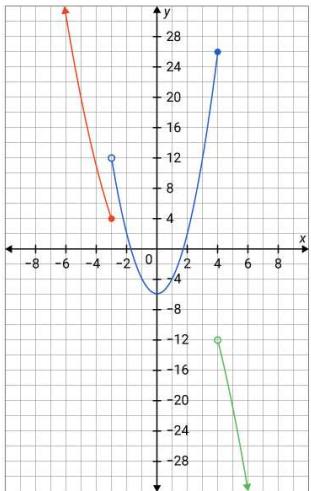
QUESTION 6



Which graph represents this function?

$$f(x) = \begin{cases} x^2 - 5 & \text{if } x < -3 \\ 2x^2 - 6 & \text{if } -3 \leq x < 4 \\ -x^2 + 4 & \text{if } x \geq 4 \end{cases}$$





QUESTION 7



What is the domain and range of this function?

$$f(x) = \begin{cases} 6 & \text{if } x < -2 \\ 2x + 3 & \text{if } x \geq -2 \end{cases}$$

Drag and drop your answers to correctly complete the sentences.

The domain is $x \in \mathbb{R}$ ✓

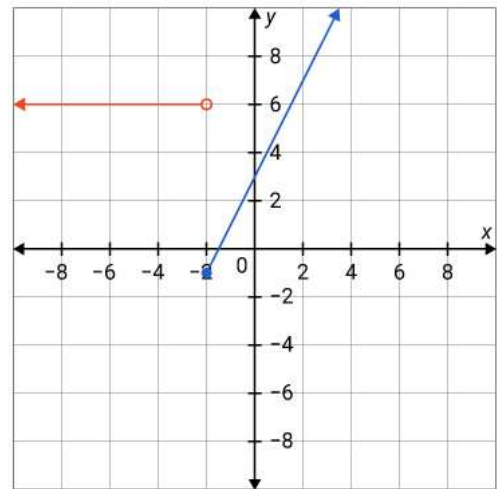
The range is $\{f(x) / f(x) \geq -1\}$ ✓

$$\{x / x < -2\}$$

$$\{f(x) / f(x) \geq -2\}$$

$$\{x / x \geq -1\}$$

$$f(x) \in \mathbb{R}$$

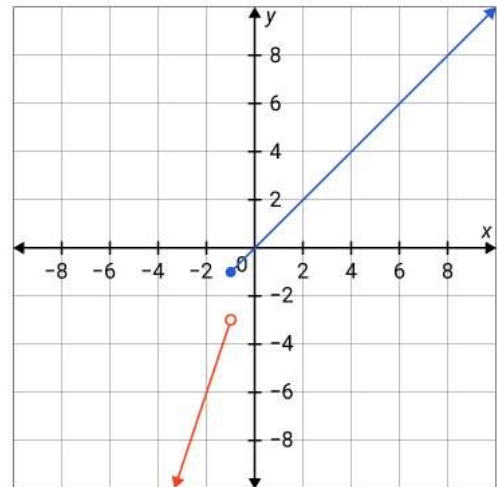


QUESTION 8



Which describes the domain and range of the function shown on this graph?

$$f(x) = \begin{cases} 3x & \text{if } x < -1 \\ x & \text{if } x \geq -1 \end{cases}$$


☐

Domain:

$$\{x / x \geq -1\}$$

Range:

$$\{f(x) / f(x) < -3\} \cup \{f(x) / f(x) \geq -1\}$$

☐

Domain:

$$\{x / x \geq -1\}$$

Range:

$$\{f(x) / f(x) \geq -1\}$$

Domain:



$$x \in \mathbb{R}$$

Range:

$$\{f(x) / f(x) < -3\} \cup \{f(x) / f(x) \geq -1\}$$



Domain:

$$x \in \mathbb{R}$$

Range:

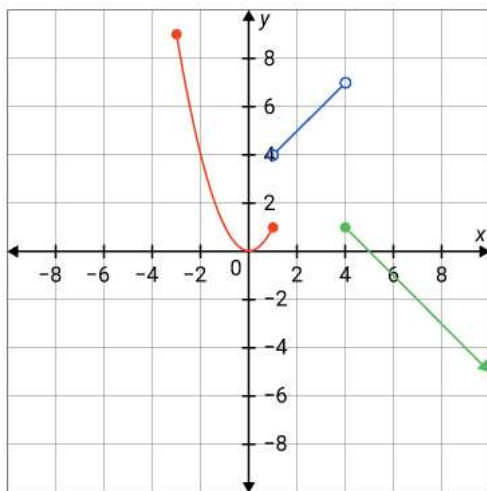
$$\{f(x) / f(x) \geq -1\}$$

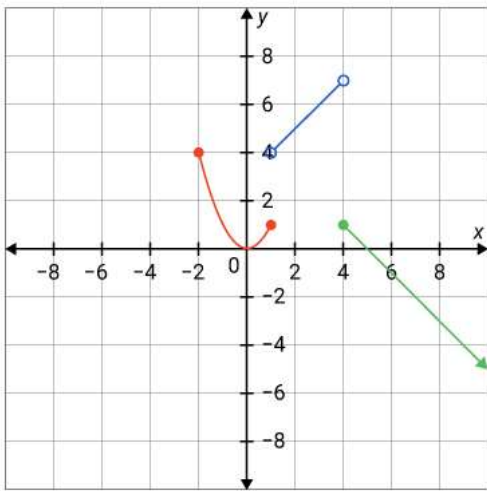
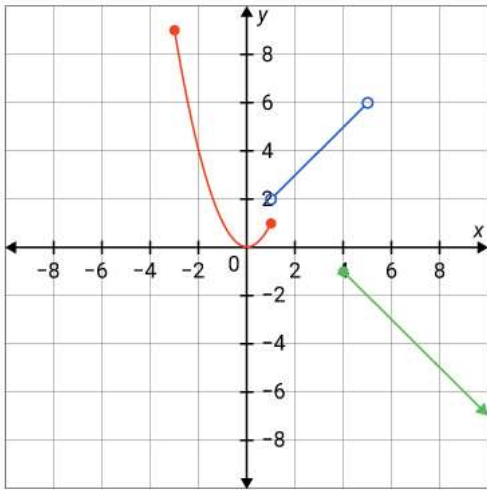
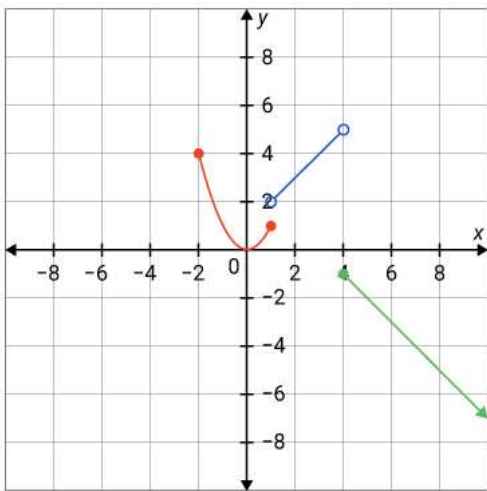
QUESTION 9



Which graph shows this function?

$$f(x) = \begin{cases} x^2 & \text{if } -2 \leq x \leq 1 \\ x + 1 & \text{if } 1 < x < 4 \\ 3 - x & \text{if } x \geq 4 \end{cases}$$



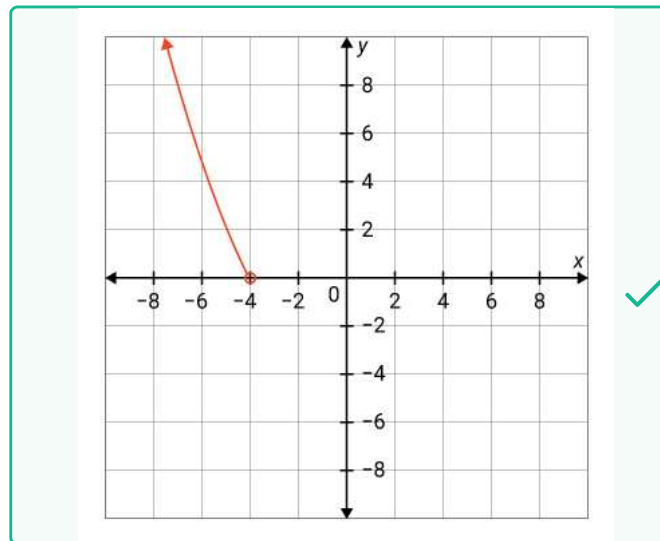
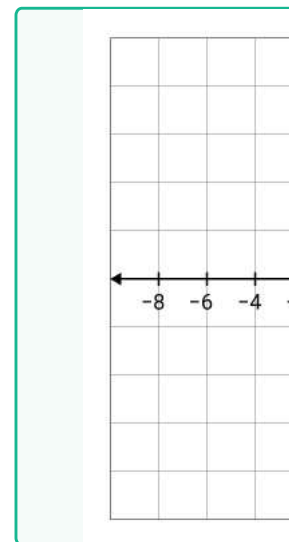
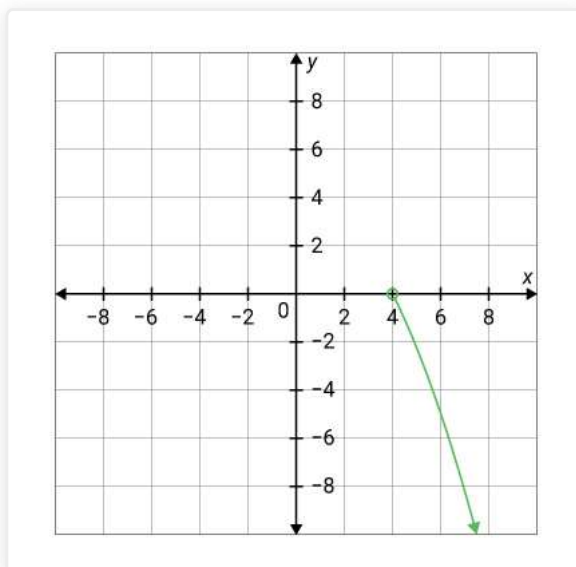
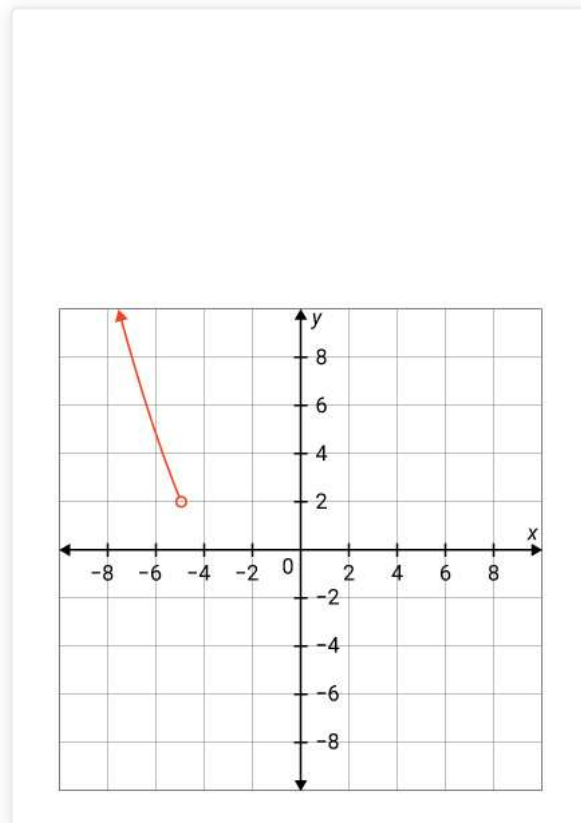


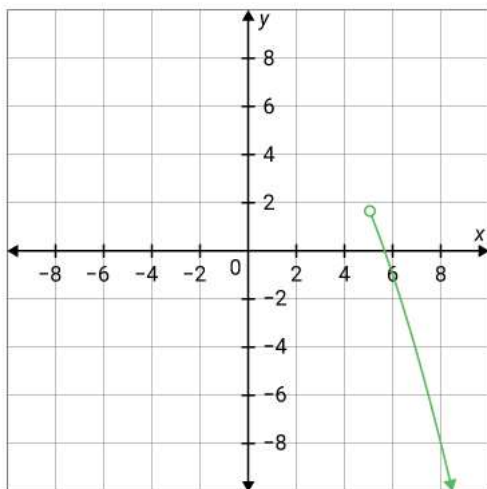
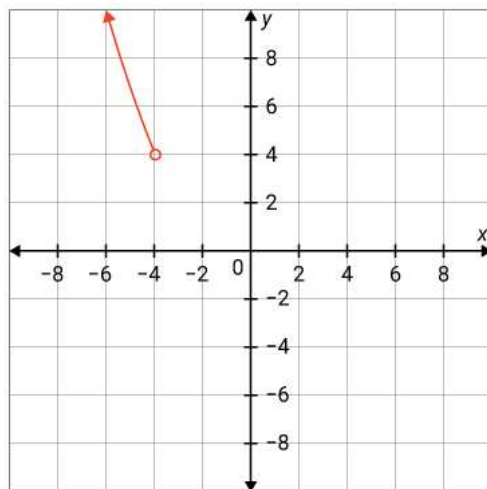
QUESTION 10



Complete the graph for this function.

$$f(x) = \begin{cases} \frac{1}{4}x^2 - 4 & \text{if } x < -4 \\ \frac{1}{4}x - 1 & \text{if } -2 < x \leq 2 \\ -\frac{1}{4}x^2 + 8 & \text{if } x > 4 \end{cases}$$





QUESTION 11



What is the domain and range of this function?

$$f(x) = \begin{cases} 6x - 10 & \text{if } 0 \leq x < 6 \\ -4x + 12 & \text{if } 6 \leq x < 12 \end{cases}$$

Domain:

$$0 \leq x < 12$$

Range:

$$\{f(x) / -36 < f(x) \leq -12\} \cup \{f(x) / -10 \leq f(x) < 26\}$$



Domain:

$$0 \leq x \leq 12$$

Range:

$$\{f(x) / -36 \leq f(x) \leq -12\} \cup \{f(x) / -10 \leq f(x) \leq 26\}$$

Domain:

$$-10 \leq x < 12$$

Range:

$$-36 < f(x) \leq 26$$

Domain:

$$0 \leq x \leq 12$$

Range:

$$f(x) \in \mathbb{R}$$

QUESTION 12

Determine the domain and range of the function shown on this graph?

$$f(x) = \begin{cases} -\frac{1}{2}x & \text{if } x < 0 \\ x + 4 & \text{if } x > 3 \end{cases}$$

Enter your answers in the spaces provided.

Domain:

$x <$

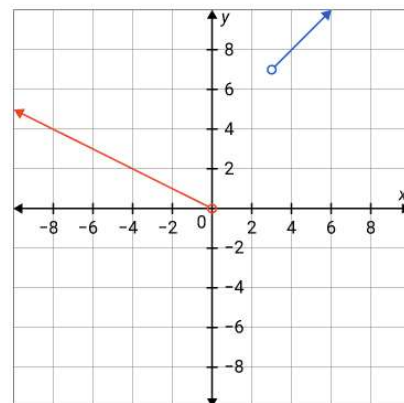


or $x >$



Range:

$f(x) >$



QUESTION 13

What is the domain and range of this function?

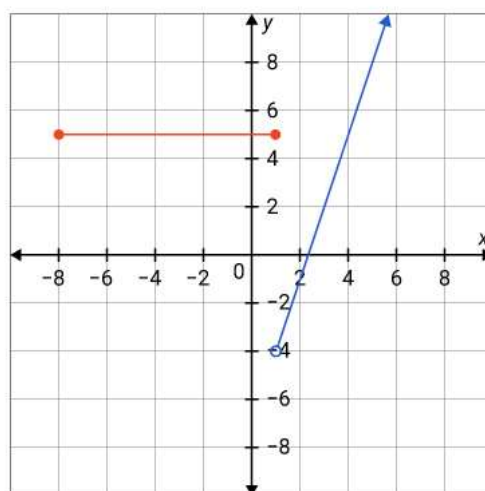
$$f(x) = \begin{cases} 5 & \text{if } -8 \leq x \leq 1 \\ 3x - 7 & \text{if } x > 1 \end{cases}$$

Drag and drop your answers to correctly complete the sentences.

The domain is



The range is



QUESTION 14

A shop owner is having a sale on milk. The milk costs AED 7 per liter if you buy 5 liters or less. If you buy more than 5 liters, you pay AED 5 per liter.

Write a piecewise-defined function for the price of

x

liters of milk.

Enter your answers in the spaces provided.

$f(x) = \{$

$7x$



if

0



$< x \leq 5$

$5x$



if

$x >$

5



QUESTION 15



Lateefa is going to start reading an assigned book for class that has 330 pages. In the first 10 days, she plans to read 15 pages each day. Then, she will read 20 pages each day thereafter until she reads the last page of the assigned book. Write a piecewise-defined function for the total number of pages Lateefa reads after

x

days of reading her assigned book.

Enter your answers in the spaces provided.

$f(x) = \{$

15



x

if

$0 \leq x \leq$

10



$150 +$

20



$(x - 10)$

if

10



$< x \leq$

19