

Time left 0:07:56

### Question 1

Not yet answered

Marked out of 1.00

Consider the following relation:

$$\{(1, 3), (2, 4), (3, 6), (4, 8), (5, 10)\}$$

The above relation is a function with a domain and codomain specified as follows:

Domain: {1, 2, 3, 4, 5} Codomain: {3, 4, 5, 6, 7, 8, 9, 10}.

Select one:

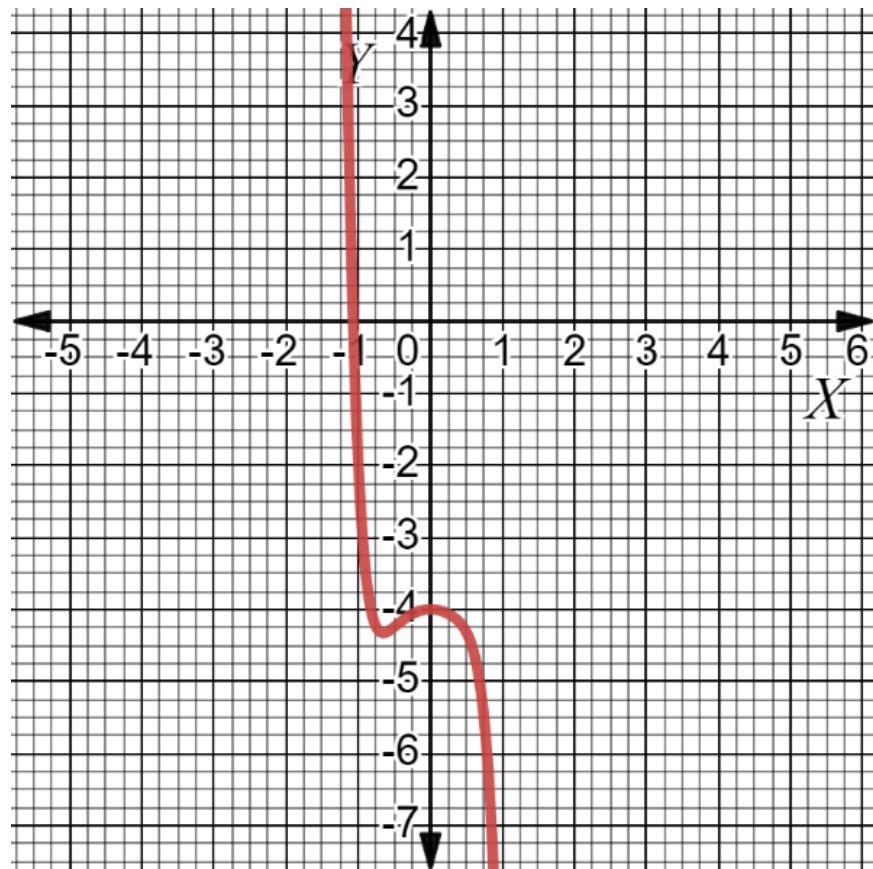
- True  
 False

**Question 2**

Not yet answered

Marked out of 1.00

What does the graph below represent?



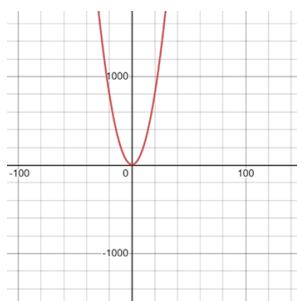
- a. Negative leading coefficient and odd degree
- b. Negative leading coefficient and even degree
- c. Positive leading coefficient and odd degree
- d. Positive leading coefficient and even degree

[Clear my choice](#)

### Question 3

Not yet answered

Marked out of 1.00



For the above graph, which one of the following statements is correct?

- a. The graph given is not a function.
- b. The domain is a set of positive real numbers.
- c. The codomain is the set of positive real numbers.
- d. The domain and codomain are set of positive real numbers.

[Clear my choice](#)

### Question 4

Not yet answered

Marked out of 1.00

The population of a city grows at a rate of 2,000 people per year. If the population is initially 100,000 people, which of the following equations represents the population (P) in terms of the number of years (t)?

- a.  $P = 2,000t + 100,000$
- b.  $P = 2,000t - 100,000$
- c.  $P = 100,000t + 2,000$
- d.  $P = 100,000t - 2,000$

[Clear my choice](#)

### Question 5

Not yet answered

Marked out of 1.00

If  $f(x) = 5x^{4+10}$  and  $g(x) = \sqrt{x}$  then  $(f \cdot g)(x)$  is:

- a.  $5x^{9/2} + 10\sqrt{x}$
- b.  $x^{9/2} + 10\sqrt{x}$
- c.  $5x^{9/2} + 10$
- d.  $5x^2 + 10\sqrt{x}$

[Clear my choice](#)

## Question 6

Not yet answered

Marked out of 1.00

If the composition of functions is well defined, which of the following is the value of  $f \circ g(4)$  for the functions  $f(x) = -10x^3 + 5$  and  $g(x) = 5x^{3/2}$

- a. -639995
- b. -395
- c.  $5(-635)^{3/2}$
- d.  $5(635)^{3/2}$

[Clear my choice](#)

## Question 7

Not yet answered

Marked out of 1.00

Consider the function  $f(x) = \sqrt{3x - 2}$ . Which of the following options correctly represents the domain and range of the function?

- a. Domain:  $(-\infty, \infty)$ ; Range:  $(-\infty, \infty)$
- b. Domain:  $[2/3, \infty)$ ; Range:  $(-\infty, \infty)$
- c. Domain:  $(-\infty, \infty)$ ; Range:  $[0, \infty)$
- d. Domain:  $[2/3, \infty)$ ; Range:  $[0, \infty)$

[Clear my choice](#)

## Question 8

Not yet answered

Marked out of 1.00

$$f(x) = \frac{x-1}{x^2+4x+3}$$

What are the vertical asymptotes of the function above?

- a.  $x = -3, x = -1$
- b.  $x = 3, x = 1$
- c.  $x = 1, x = -3$
- d.  $x = 1, x = 3$

[Clear my choice](#)

### Question 9

Not yet answered

Marked out of 1.00

Which of the following options is an example of a polynomial function used to model a real-world situation?

- a.  $f(x) = 3x^2 - 5x + 2$
- b.  $f(x) = 1/x$
- c.  $f(x) = \sqrt{x}$
- d.  $f(x) = e^x$

[Clear my choice](#)

### Question 10

Not yet answered

Marked out of 1.00

Which of the following quadratic equations has two real solutions?

- a.  $x^2 + 2x + 1 = 0$
- b.  $x^2 - 2x + 1 = 0$
- c.  $x^2 + 2x - 1 = 0$
- d.  $x^2 - 2x + 6 = 0$

[Clear my choice](#)

### Question 11

Not yet answered

Marked out of 1.00

What is the standard form of a quadratic equation?

- a.  $y = mx + b$
- b.  $ax^2 + bx + c = 0$
- c.  $y = a(x - h)^2 + k$
- d.  $y = e^x$

[Clear my choice](#)

## Question 12

Not yet answered

Marked out of 1.00

The vertex of a quadratic function is (1, -3), and a point on the graph is (2, -2). Which of the following represents the general form of the quadratic equation?

- a.  $y = x^2 - 2x - 2$
- b.  $y = x^2 - 2x + 2$
- c.  $y = x^2 + 2x - 2$
- d.  $y = x^2 + 2x + 2$

[Clear my choice](#)

## Question 13

Not yet answered

Marked out of 1.00

Which of the following statements about polynomial functions is true?

- a. They are defined for all real numbers.
- b. They always have a finite number of solutions.
- c. They can have terms with negative powers.
- d. They can have fractional exponents.

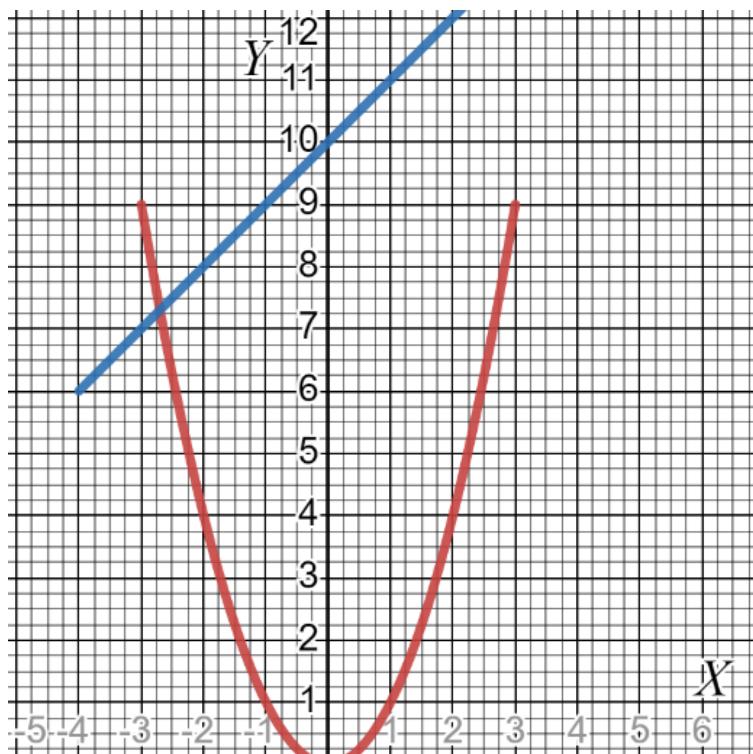
[Clear my choice](#)

### Question 14

Not yet answered

Marked out of 1.00

The graph below can be a polynomial of degree 2 or more.



Select one:

- True  
 False

### Question 15

Not yet answered

Marked out of 1.00

Which of the following quadratic equations has one real solution?

- a.  $x^2+32x+256=0$   
 b.  $x^2-2x-10=0$   
 c.  $x^2+4x-12=0$   
 d.  $x^2-5x-14=0$

[Clear my choice](#)

### Question 16

Not yet answered

Marked out of 1.00

The cost of a shirt is \$20, and the price increases by \$5 for each additional shirt. Which of the following equations represents the total cost  $C$ , if the number of shirts is  $n$ ?

- a.  $C = \frac{n}{2}(5n + 35)$
- b.  $C = \frac{n}{2}(5n + 15)$
- c.  $C = 5n + 15$
- d.  $C = 20n + 5$

[Clear my choice](#)

### Question 17

Not yet answered

Marked out of 1.00

The area  $A$  (in square meters) of a rectangular garden with a fixed perimeter is given by the quadratic function  $A(x) = -x^2 + 12x$ , where  $x$  represents the length of one side. What is the maximum area that can be obtained?

- a. 36 square meters
- b. 48 square meters
- c. 64 square meters
- d. 72 square meters

[Clear my choice](#)

### Question 18

Not yet answered

Marked out of 1.00

Which of the following is a quadratic equation in a variable  $x$ ?

- a.  $y = y^2 + 2x + 1$
- b.  $y^2 = x^2$
- c.  $y = x^2 + 2x + 1$
- d.  $x^3 + 2x + 1 = 0$

[Clear my choice](#)

### Question 19

Not yet answered

Marked out of 1.00

Consider the relation R defined by the equation  $y = \sqrt{(x + 2)}$ , where the domain and codomain are specified as follows:

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

Codomain:  $[0, \infty)$

The above relation is a function.

Select one:

- True
- False

### Question 20

Not yet answered

Marked out of 1.00

If  $f(x) = 5x^4 + 10$  and  $g(x) = \sqrt{x}$ , then for  $x \neq 0$ , the value of  $f/g(x)$  is

- a.  $5x^{7/2} + 10x^{-1/2}$
- b.  $5x^{7/2} + 10x^{1/2}$
- c.  $5x^{9/2} + 10\sqrt{x}$
- d.  $5x^{9/2} + 5\sqrt{x}$

[Clear my choice](#)

### Question 21

Not yet answered

Marked out of 1.00

What are the number of intercepts and turning points of the polynomial  $20x^{10} + 6x^9 - 3x^5 - 10x^4$ ?

- a. 10,9
- b. 9,10
- c. 6,5
- d. 5,6

[Clear my choice](#)

## Question 22

Not yet answered

Marked out of 1.00

Which of the following quadratic equations has no real solutions?

- a.  $x^2+2x+1=0$
- b.  $x^2-2x+1=0$
- c.  $x^2+2x-2=0$
- d.  $x^2-2x+2=0$

[Clear my choice](#)

## Question 23

Not yet answered

Marked out of 1.00

Which of the following functions is NOT an example of a power function?

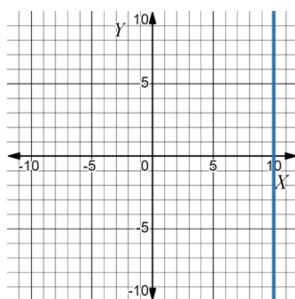
- a.  $f(x) = 2^x$
- b.  $f(x) = 2x^3$
- c.  $f(x) = 2x^5/7$
- d.  $f(x) = 2x^{-5}$

[Clear my choice](#)

## Question 24

Not yet answered

Marked out of 1.00



Which one of the following is true for the above graph?

- a. The graph is not a function.
- b. The graph is a function.
- c. The graph is not a one-one function.
- d. The graph is one-one function.

[Clear my choice](#)

### Question 25

Not yet answered

Marked out of 1.00

With respect to the horizontal asymptotes of  $f(x) = \frac{x-10}{x^2-12x+20}$  which of the following alternatives is correct?

- a.  $f(x)=0$  is a horizontal asymptote
- b.  $x= 0$  is a horizontal asymptote
- c.  $x = 10, 2$  are horizontal asymptotes
- d.  $f(x) = 2$  is a horizontal asymptote

[Clear my choice](#)