

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

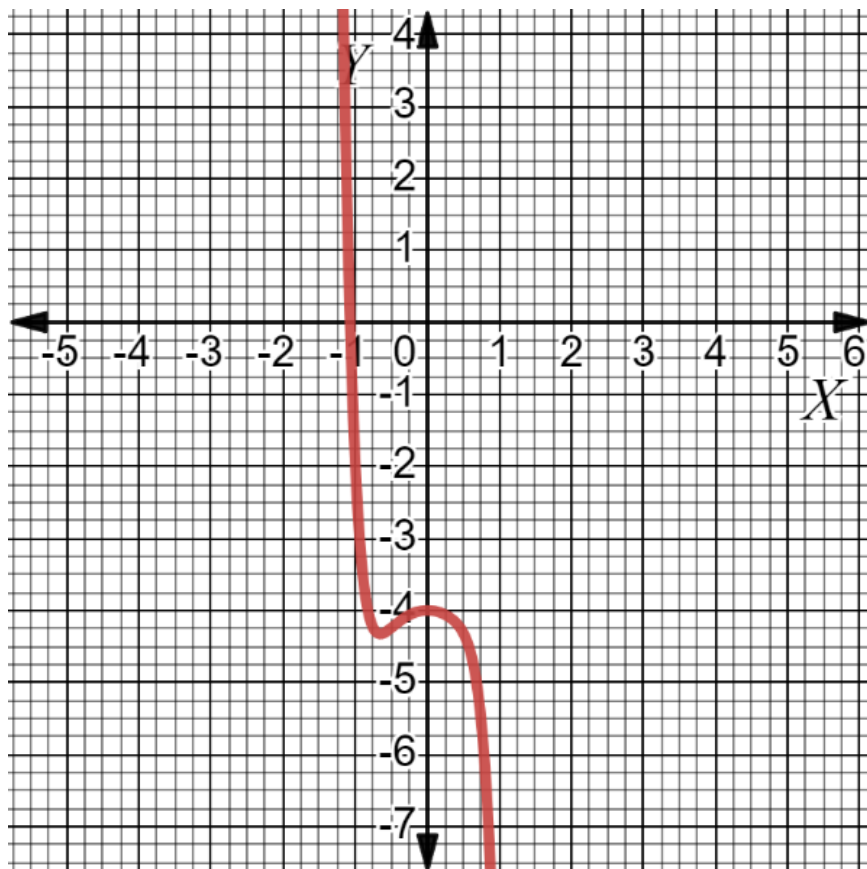
☐ False

Question 2

Not yet answered

Marked out of 1.00

What does the graph below represent?



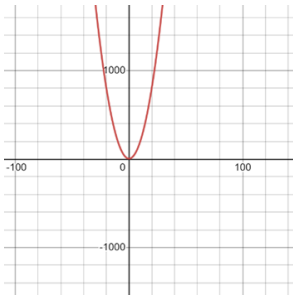
- ☒ a. Negative leading coefficient and odd degree
- ☐ b. Negative leading coefficient and even degree
- ☐ c. Positive leading coefficient and odd degree
- ☐ d. Positive leading coefficient and even degree

[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 $(f.g)(x)$ 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. $f(x) = \text{sqrt}(x)$
- ☐ 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.

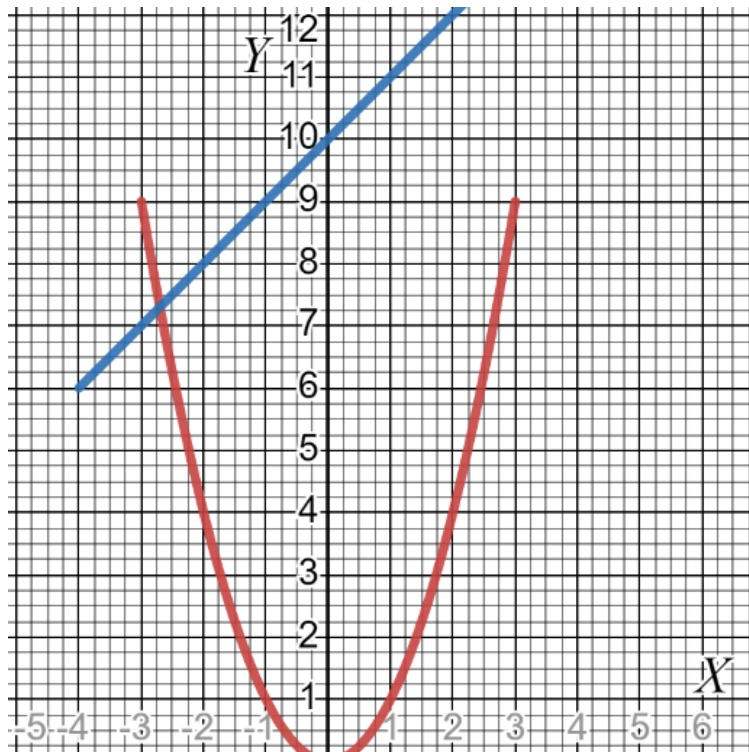
[Clear my choice](#)

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?

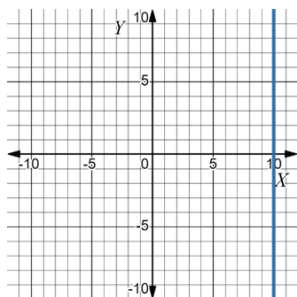
- ☐ a. $f(x) = 2^x$
- ☐ b. $f(x) = 2x^3$
- ☒ c. $f(x) = 2x^5/7$
- ☐ d. $f(x) = 2x^{-5}$

[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](#)