

Choose the correct answer in the following questions:

- 1- Write a polynomial of the least degree with integers coefficients such that**

$-\sqrt[5]{7}$ is a zero of the function:

- a. $x^5 + 7$ b. $2x^5 + 7$
c. $x^5 - 7$ d. $7x^5 + 7$

- 2- Find the domain of the function $f(x) = \frac{x^2-3}{x^2-9}$:

- a. $R \text{ except } \{3, -3, 9\}$ b. $R \text{ except } \{3\}$
c. $R \text{ except } \{3, -3\}$ d. $R \text{ except } \{-3\}$

- 3- Find the equation of vertical and horizontal asymptotes of $f(x) = \frac{x^2-3}{x^2-9}$:

- a. *vertical: $x = 3$, horizontal: $y = 1$*
- b. *vertical: $x = 9$, horizontal: $y = 1$*
- c. *vertical: $x = -3$, horizontal: $y = 1$*
- d. *vertical: $x = 3$, $x = -3$, horizontal: $y = 1$*

- 4- Find the domain of the function $f(x) = \frac{(x-2)(x+3)}{3(x-1)(x+1)}$:

- a. R
- b. $R \text{ except } \{-1\}$
- c. $R \text{ except } \{-1, 0\}$
- d. $R \text{ except } \{1, -1\}$

- 5- Find the equation of vertical and horizontal asymptotes of $f(x) = \frac{6(x-2)(x+3)}{3(x-1)(x+1)}$.

- a. *vertical: $x = 0, x = -1$, horizontal: $y = 2$*
- b. *vertical: $x = 1, x = -1$, horizontal: $y = 2$*
- c. *vertical: $x = -1, x = 1$ horizontal: $y = 1$*
- d. *vertical: $x = 0, x = -1$, horizontal: $y = 2$*

6- Find the domain of the function $f(x) = \frac{2(x-2)}{(x-1)^2(x+1)}$:

a. R

b. R except $\{-1\}$

c. R except $\{-1, 0\}$

d. R except $\{1, -1\}$

7- Find the equation of vertical and horizontal asymptotes of $f(x) = \frac{2(x-2)(x+1)}{(x-1)^2(x+1)}$:

a. vertical: $x = 0, x = 1$, horizontal: $y = 0$

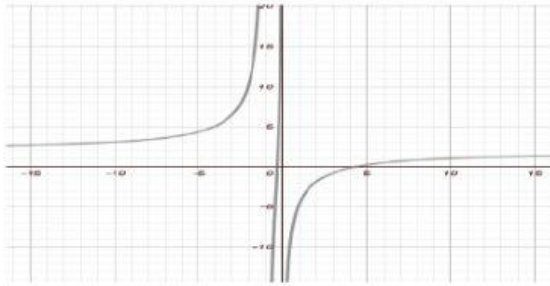
b. vertical: $x = 1$, horizontal: $y = 2$

c. vertical: $x = 1$ horizontal: $y = 0$

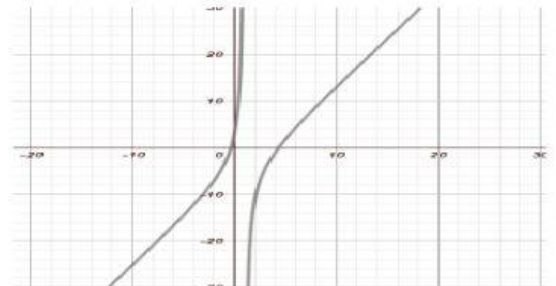
d. vertical: $x = 1, x = -1$, horizontal: $y = 0$

8- The graph of the function $f(x) = \frac{2x^2-8x-3}{x^2+x}$ is :

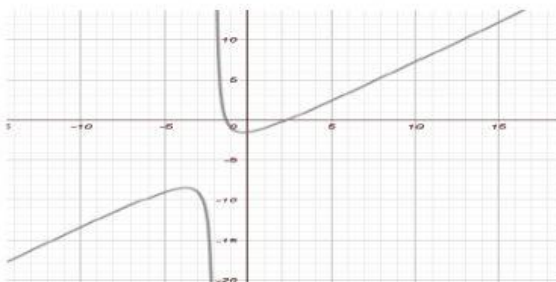
a.



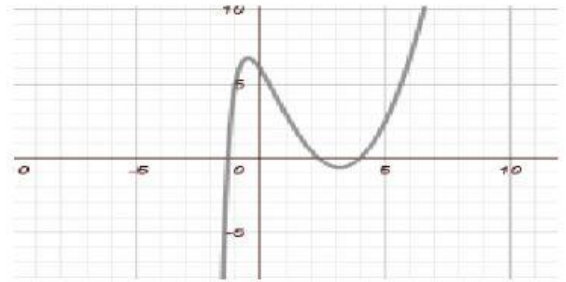
b.



c.



d.



9- The solution of the equation $5 = y - \frac{y}{6}$ is

- a. $\{-6\}$
- b. $\{5\}$
- c. $\{5, 6\}$
- d. $\{6\}$

10- The solution of the equation $(8 - 2y)(y - 1) > 0$ is:

- a. $[1, 4]$
- b. $(-\infty, 1] \cup [4, \infty)$
- c. $(1, 4)$
- d. $(-\infty, 1) \cup (4, \infty)$

11- The solution of the equation $2x^2 \leq -3x + 5$ is:

- a. $[-2.5, 1]$
- b. $(-\infty, -2.5] \cup [1, \infty)$
- c. $(-2.5, 1)$
- d. $(-\infty, -2.5) \cup (1, \infty)$

12- The solution of the equation $(x - 5)(2x + 6) > 0$ is:

- a. $(-\infty, -3)$
- b. $(-\infty, -3] \cup [5, \infty)$
- c. $(5, \infty)$
- d. $(-\infty, -3) \cup (5, \infty)$

13- The solution of the equation $\frac{2x+4}{(x-3)^2} < 12$ is:

- a. $\left[\frac{13}{6}, 4\right]$
- b. $(-\infty, \frac{13}{6}] \cup [4, \infty)$
- c. $(\frac{13}{6}, 4)$
- d. $(-\infty, \frac{13}{6}) \cup (4, \infty)$

14- The solution of the equation $(x - 3)^3(x + 2)^3(x - 6)^2 > 0$ is:

- a. $[-2, 3]$
- b. $(-\infty, -2] \cup [3, \infty)$
- c. $(-\infty, -2) \cup (3, 6) \cup (6, \infty)$
- d. $(-\infty, -2) \cup (3, \infty)$

Answers

1-a

2-c

3-d

4-d

5-b

6-d

7-c

8-a

9-d

10-c

11-a

12-d

13-d

14-b

15-c