



Ninth Grade - LQE Model

1) Find the roots of $6x^2 + x - 2$ using factoring

- $(\frac{2}{3}, -\frac{1}{2})$
- $(-\frac{2}{3}, -\frac{1}{2})$
- $(\frac{2}{3}, \frac{1}{2})$
- $(-\frac{2}{3}, \frac{1}{2})$

2) Find the roots of $6x^2 + 7xy - 20y^2$ using factoring

- $(\frac{5}{2}y, \frac{4}{3}y)$
- $(-\frac{5}{2}y, \frac{4}{3}y)$
- $(\frac{5}{2}y, -\frac{4}{3}y)$
- $(-\frac{5}{2}y, -\frac{4}{3}y)$

3) Find the roots of $20x^2 - 13x + 2 = 0$ using factoring.

- 0.5 or 0.25
- 0.4 or 0.25
- 0.4 or 0.30
- 0.4 or 0.4 5

4) Find the roots of $8x^2 + 14x - 15 = 0$ using factoring.

- -2.5 or -0.75
- 2.5 or 0.75
- 2.5 or -0.75
- -2.5 or 0.75

5) Find the roots of $5x = \frac{3}{x} - 1\frac{1}{2}$ using factoring.



- -1.5 or 0.4
- -1.5 or -0.4
- 1.5 or -0.4
- 1.5 or 0.4

6) Find the roots of $8y^2 - 2y - 15$ using factoring.

- $-5/4$, $-3/2$
- $5/4$, $3/2$
- $-5/4$, $3/2$
- $-5/4$, $3/2$

7) Find the roots of $15x^2 + 14x - 16$ using factoring.

- $2/3$, $8/5$
- $-2/3$, $-8/5$
- $-2/3$, $8/5$
- $2/3$, $-8/5$

8) Find the roots of $6x^2 - x - 15 = 0$ using factoring.

- $3/2$, $-5/3$
- $-3/2$, $-5/3$
- $3/2$, $5/3$
- $-3/2$, $5/3$

9) Find the roots of $8y^2 + 10y - 25 = 0$ using factoring.

- $5/4$, $-5/2$
- $7/8$, $1/2$
- $5/4$, $5/2$
- $4/5$, $6/3$



10) Find the roots of $6x^2 - 47x + 77$ using factoring.

- $7/3, -11/2$
- $-7/3, 11/2$
- $-7/3, -11/2$
- $7/3, 11/2$

11) In solving the quadratic equation $2x^2 - 12x + 13 = 0$ by the method of Completing the Square, which of the following is correct?

- 78
- 3.5
- 2.5
- -2.5

12) In solving the quadratic equation $5x^2 + 2x - 9 = 0$ by the method of Completing the Square, which of the following is correct?

- 3.84
- 0.84
- 2.84
- 1.84

13) In solving the quadratic equation $4y^2 - 12y + 7 = 0$ by the method of Completing the Square, which of the following is correct?

- 0.2
- 0.7
- 0.6
- 0.8

14) In solving the quadratic equation $8z^2 - 3z - 2 = 0$ by the method of Completing the Square, which of



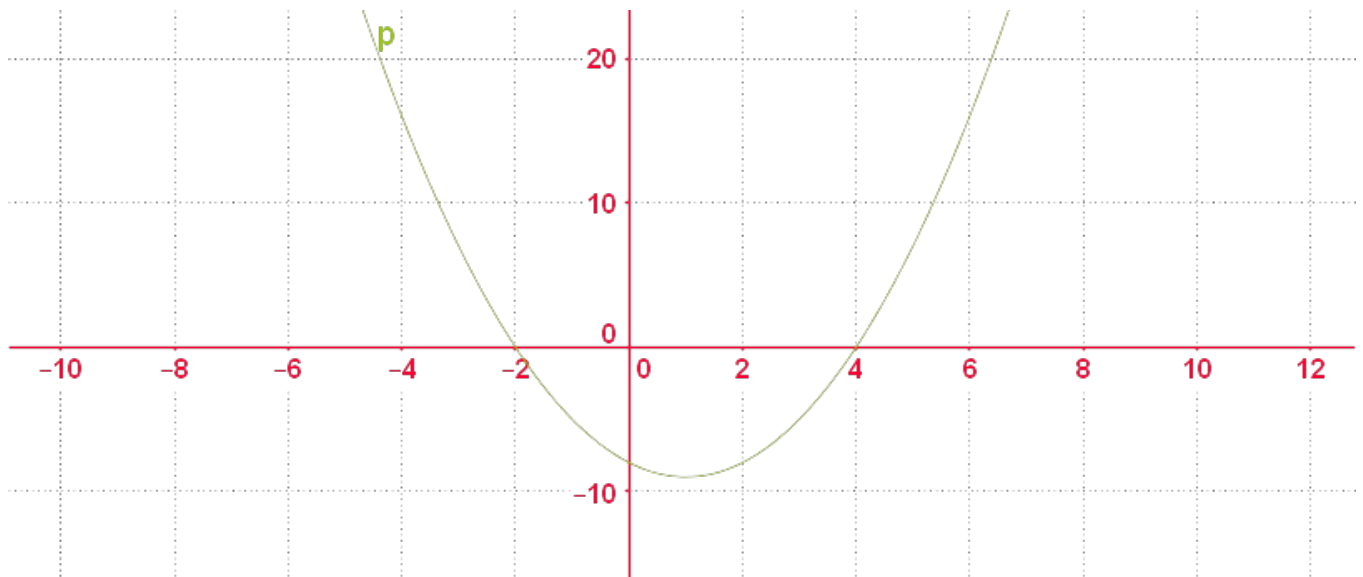
the following is correct?

- 0.2579625
- 0.28875
- 0.79515625
- 0.28515625

15) Which of the following is correct for the vertex of the parabola $f(x) = 2x^2 + 8x - 12$?

- (2, 20)
- (-2, 20)
- (-2, -20)
- (2, -20)

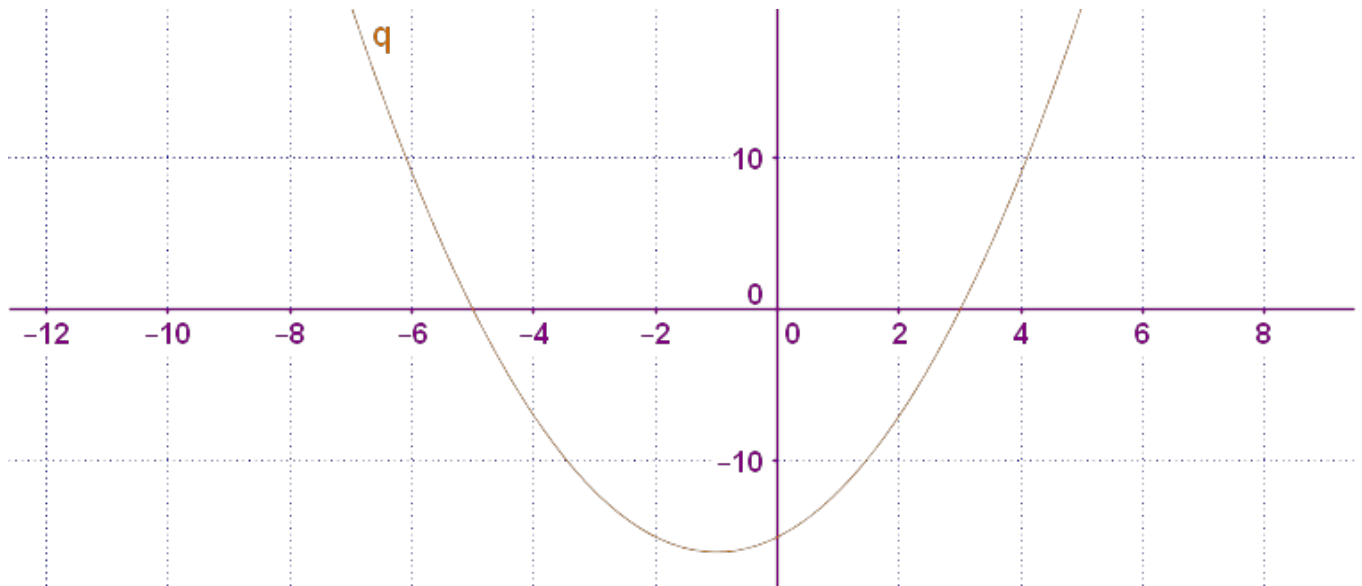
16) The below shows part of the graph of the function $f(x) = x^2 - 2x - 8$. What is the equation of its axis of symmetry?



- 3
- 1
- 8
- 7

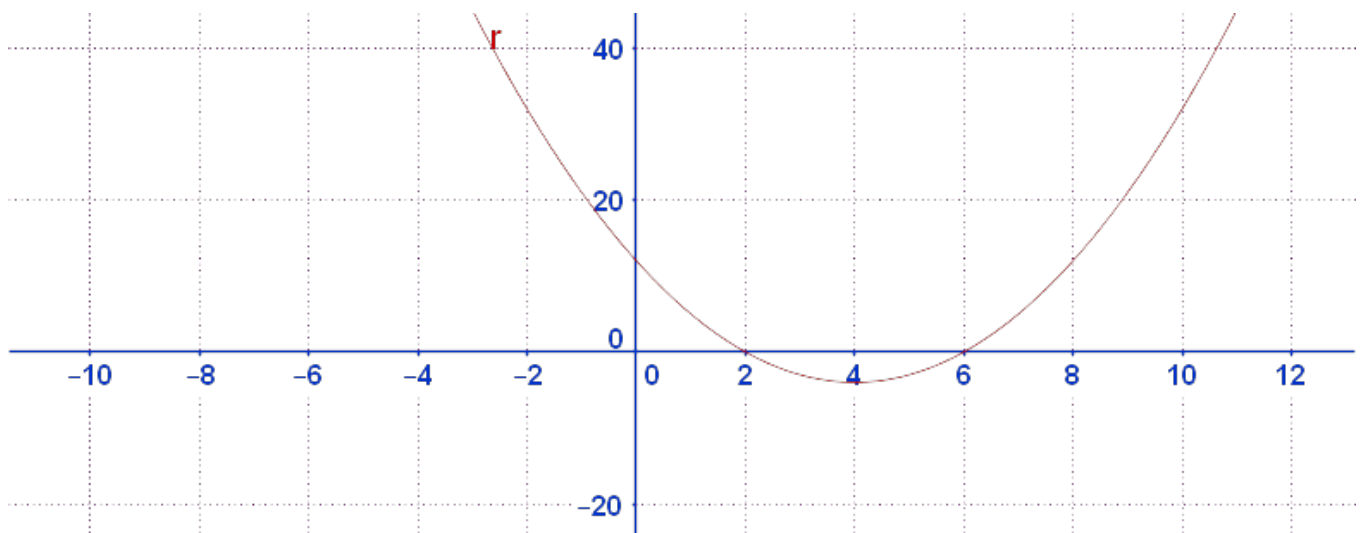


17) The below shows part of the graph of the function $f(x) = x^2 + 2x - 15$. What is the equation of its axis of symmetry?



- 8
- 6
- 1
- 3

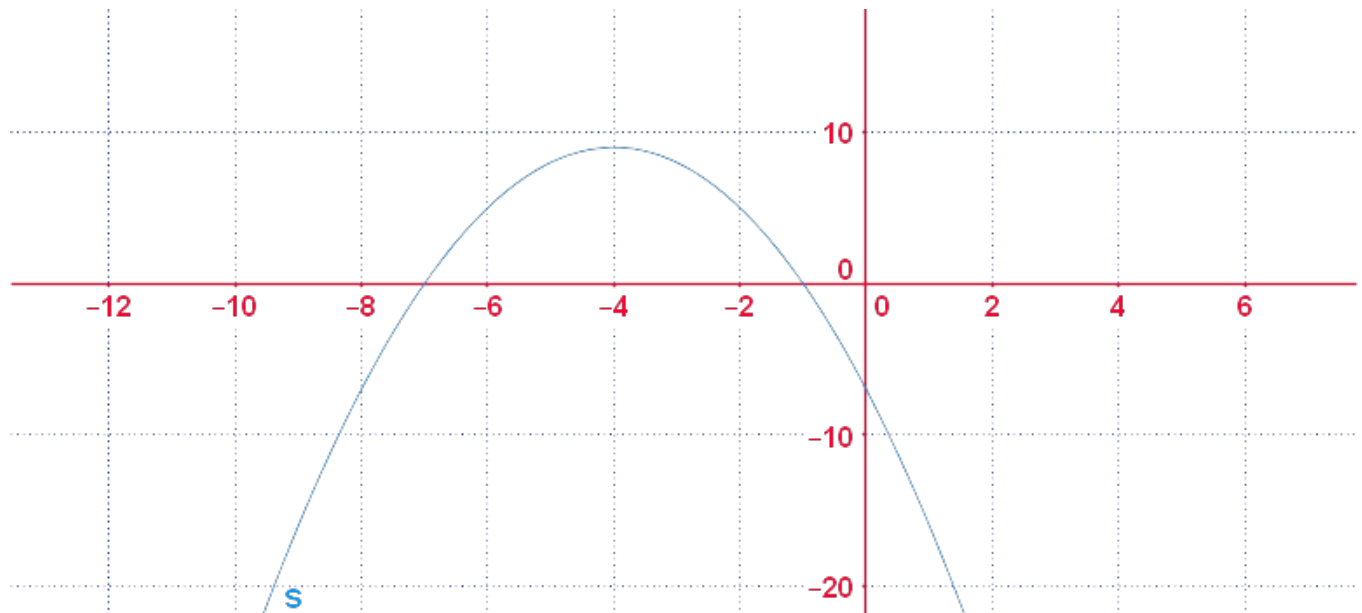
18) The below shows part of the graph of the function $f(x) = x^2 - 8x + 12$. What is the equation of its axis of symmetry?



- -4
- -5
- 5
- 4



19) The below shows part of the graph of the function $f(x) = -x^2 + 8x - 7$. What is the equation of its axis of symmetry?



- -4
- 8
- 5
- 9

20) Solving the quadratic equation $x^2 - 4 = 0$; $x = ?$

- 8
- -5
- -2
- 5

21) Solving the quadratic equation $3x^2 + 4x + 5 = 0$; $x = ?$

- $-32 > 4$
- -44
- $-66 > 3$
- $-32 > 4$



22) Solving the quadratic equation $x^2 + 4x - 5 = 0$; $x = ?$

- (1,5)
- (7,2)
- (1,-5)
- (0,9)

23) Write the equation of the line that has a slope of $-7/8$ and contains the point $(4, 5/4)$

- $(-7/8)x + (9/4)$
- $(-7/8)x + (19/4)$
- $(7/8)x + (19/4)$
- $(-7/8)x - (19/4)$

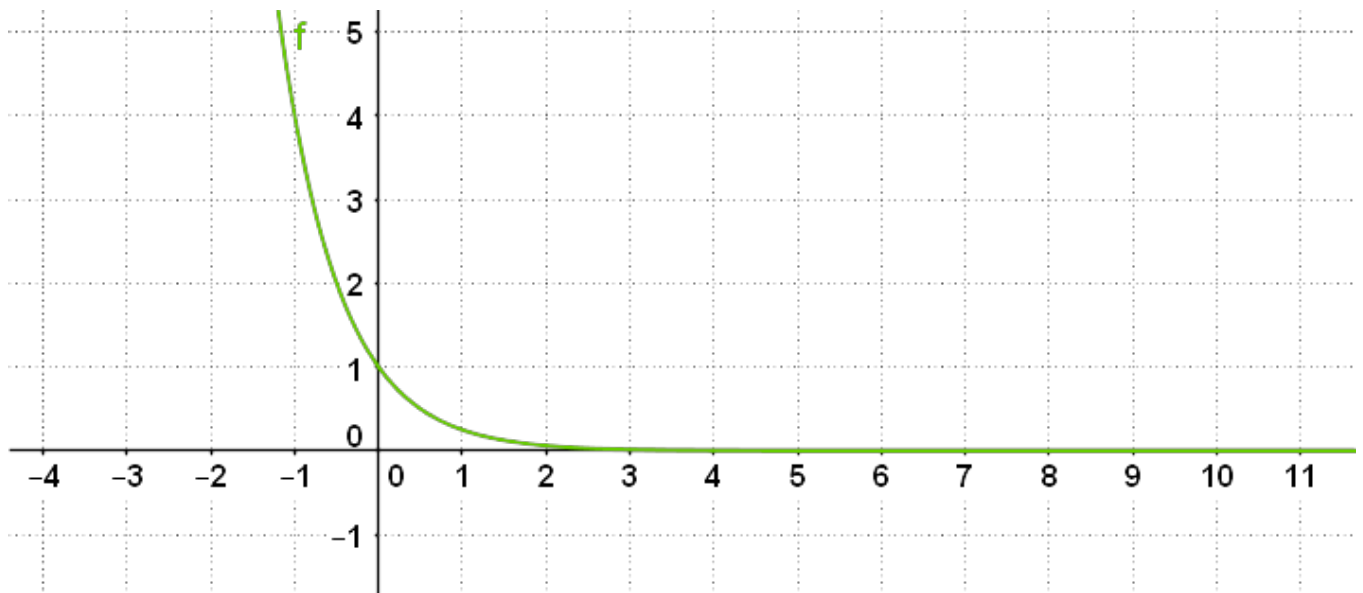
24) Write the slope-intercept form of the line with a slope of -0.6 and which contains the point $(3.8, 7.25)$

- $y = -0.6x + 9.53$
- $y = -0.6x + 4.97$
- $y = -0.6x + 3.8$
- $y = 3.8x + 7.25$

25) Write the equation of the line that passes through the points $(2, 1)$ and $(?1, ?5)$

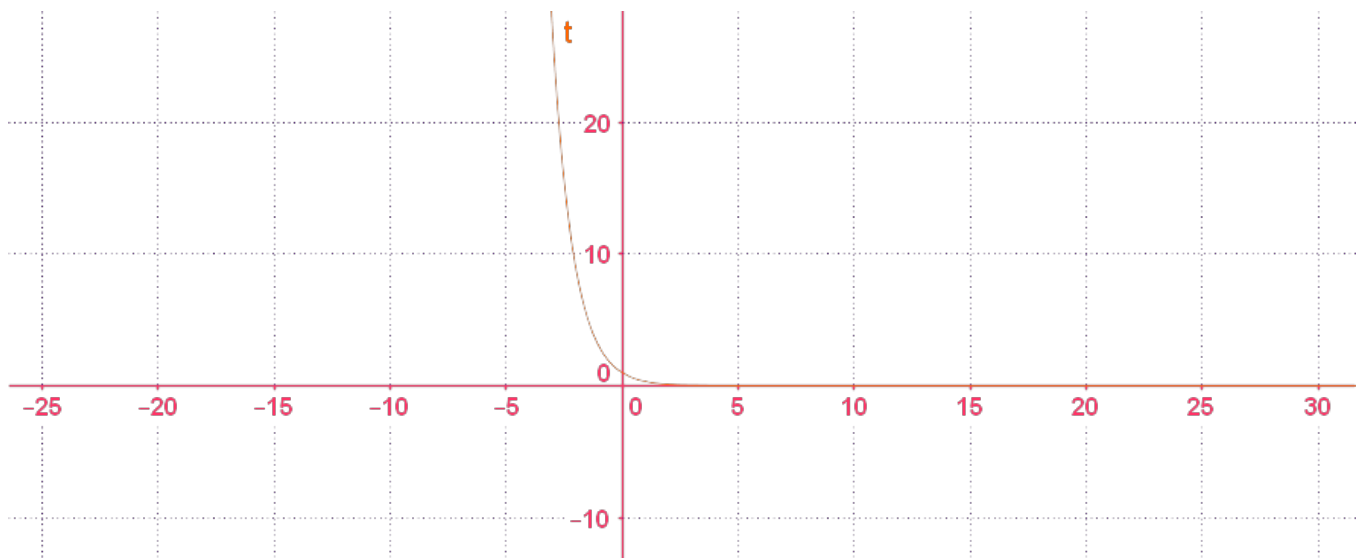
- $y = 2x - 3$
- $y = 2x + 3$
- $y = 2x - 4$
- $y = -2x - 3$

26) Identify the correct function for the below graph.



- $2 - x$
- $4 - x$
- $5 - x$
- $7 - x$

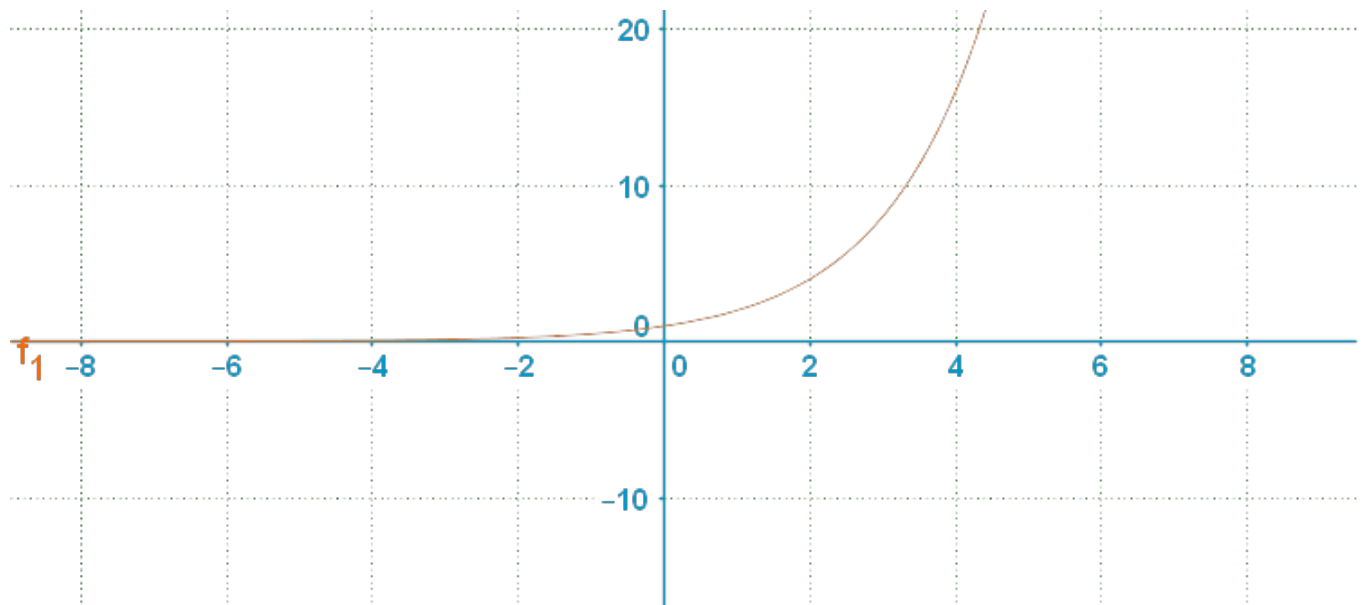
27) Identify the correct function for the below graph.



- $6 - x$
- $8 - x$
- $7 - x$
- $3 - x$

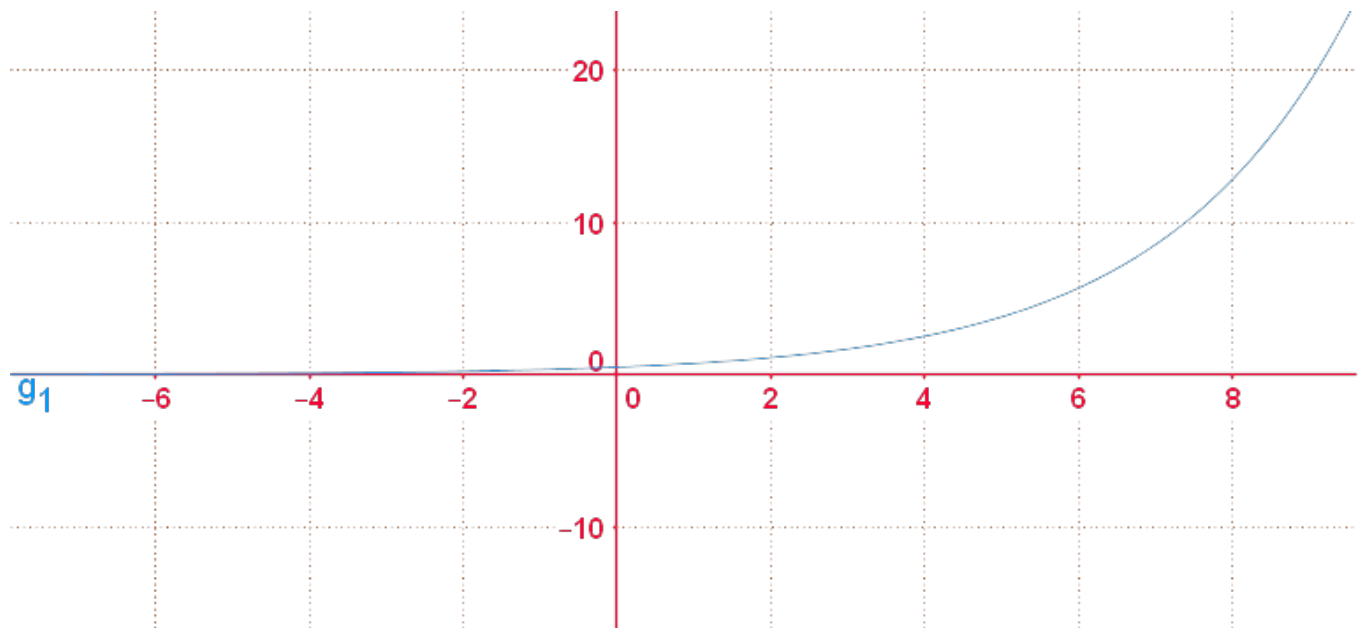


28) Identify the correct function for the below graph.



- $(5/2)-x$
- $(1/2)-x$
- $(3/2)-x$
- $(9/2)-x$

29) Identify the correct function for the below graph.



- $(1/2)^{x/2}$
- $(3/2)^{x/2}$
- $(9/2)^{x/2}$



- $(5/2)^{x/2}$

30) Given $f(x) = 45(6)^{(1/2)x}$, Evaluate $f(3)$

- 601.36
- 661.36
- 671.36
- 691.36