

1) The table shows the linear relationship between the average height in feet of trees on a tree farm and the number of years since the trees were planted.

Number of Years Since the Trees Were Planted	1	4	8	12	19
Average Height (ft)	11	29	53	77	119

What is the **rate of change** of the average height in feet of the trees on the farm with respect to the number of years since the trees were planted?

- A. 4 ft/yr B. 6 ft/yr C. 3 ft/yr D. 18 ft/yr

2) The total number of seats in an auditorium is modeled by $f(x) = 2x^2 - 6x$, where x represents the number of rows of seats. How many rows are there in the auditorium if it has a total of 416 seats?

- A. 32 C. 20
B. 13 D. 16

3) The table represents some points on the graph of an exponential function.

x	-2	-1	0	1	2
$f(x)$	0.5	2	8	32	128

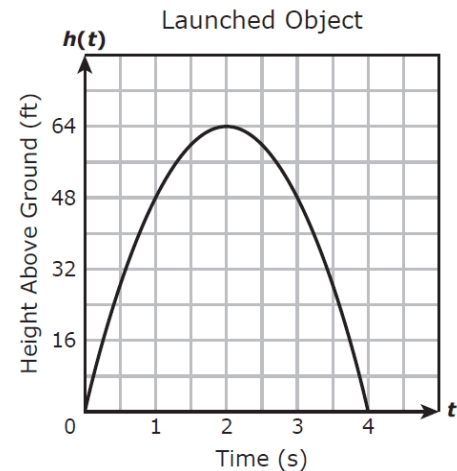
Which function represents the **same** relationship?

- A. $f(x) = 8(4)^x$ C. $f(x) = 32(4)^x$
B. $f(x) = 32(\frac{1}{4})^x$ D. $f(x) = 8(\frac{1}{4})^x$

4) Which expression is equivalent to $\frac{20x^{-4}y^8z^{10}}{15x^{-6}y^{13}z^{-4}}$ for all values of a , b , and c where the expression is defined?

- A. $\frac{4x^2y^5}{3z^{14}}$ C. $\frac{4x^2z^{14}}{3y^5}$
B. $\frac{4y^5z^{14}}{3x^{10}}$ D. $\frac{4x^2z^6}{3y^{21}}$

5) The graph shows the height in feet of an object above the ground t seconds after it was launched from the ground.



Which function is best represented by the graph of this situation?

- A. $h(t) = -16t^2 - 64t$ C. $h(t) = -16t^2 + 128t - 256$
B. $h(t) = -16t^2 + 64t$ D. $h(t) = -16t^2 - 128t - 256$

6) Which **expression** is **equivalent** to $(a^5)^6 \cdot (b^6)^2$ for all values of x and y where the expression is defined?

- A. $a^{30}b^8$ B. $a^{11}b^8$ C. $a^{30}b^{12}$ D. $a^{11}b^{12}$

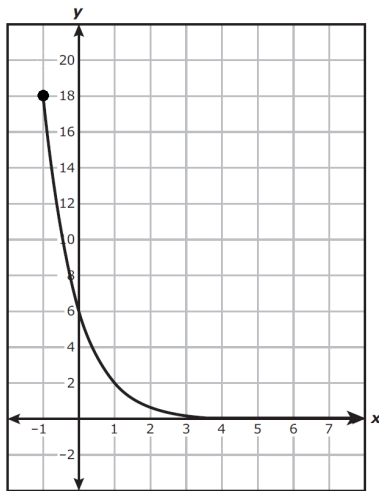
7) The table shows the number of bikes remaining at a store as a function of the number of weeks have passed since the store opened.

Number of Weeks w	The number of bikes remaining at the store $b(w)$
1	41
2	34
4	20
6	6

Based on the table, which function models this situation?

- A. $b(w) = 7w - 41$ C. $b(w) = 7w - 48$
 B. $f(n) = -7w + 41$ D. $b(w) = -7w + 48$

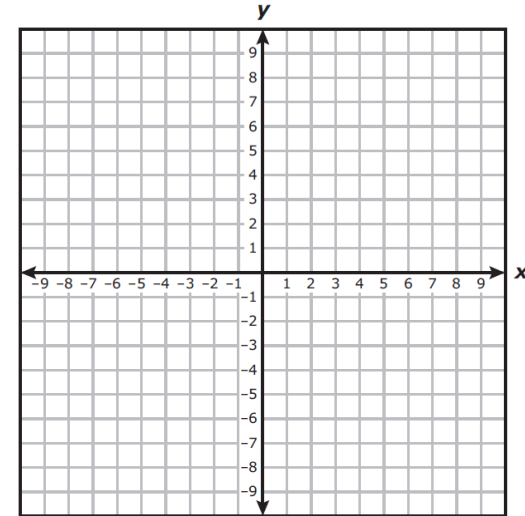
8) A part of a quadratic function is graphed on the grid.



Which inequality best represents the domain of the part shown?

- A. $x < -1$ B. $y < 18$ C. $x < 18$ D. $y < 6$

9) The graph of linear function m passes through the points $(-8, -3)$ and $(8, 1)$.



Which statement must be **true**?

- A. The x-intercept of graph of m is -1
 B. The slope of graph m is $\frac{1}{4}$
 C. The graph of m passes through the point $(0, 4)$
 D. The zero of m is -4

10) What is the equation in slope-intercept form of the line that passes through the point $(-3, 7)$ and is **parallel** to the line represented by $y = x + 4$?

- A. $y = -x + 7$ C. $y = x + 13$
 B. $y = -x + 4$ D. $y = x + 10$

11) The expression $\frac{(x^3)^4 \cdot x^8}{x^{14}}$ is equivalent to x^p .

What is the value of p ? Answer : _____.

Answer Key-1

1	B
2	D
3	A
4	C
5	B
6	C
7	D
8	A
9	B
10	D
11	6