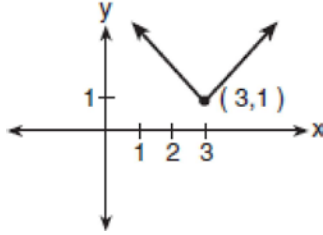


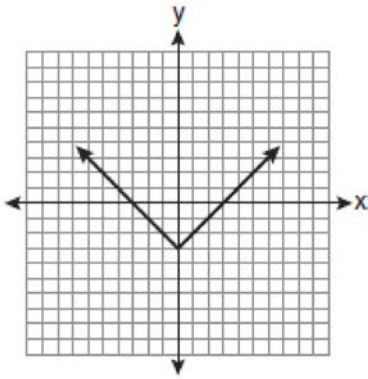
F.LE.A.2: Families of Functions 1a

1 Which equation is represented by the accompanying graph?



- 1) $y = |x| - 3$
- 2) $y = (x - 3)^2 + 1$
- 3) $y = |x + 3| - 1$
- 4) $y = |x - 3| + 1$

2 Which equation is represented by the graph below?

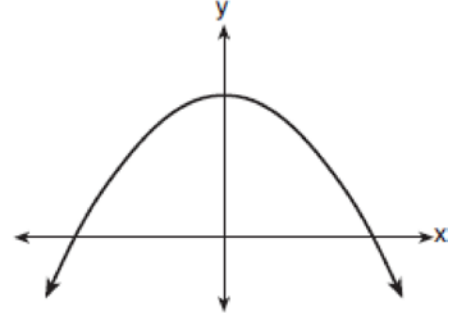


- 1) $y = x^2 - 3$
- 2) $y = (x - 3)^2$
- 3) $y = |x| - 3$
- 4) $y = |x - 3|$

3 Which equation represents a quadratic function?

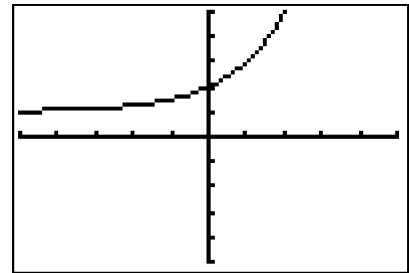
- 1) $y = x + 2$
- 2) $y = |x + 2|$
- 3) $y = x^2$
- 4) $y = 2^x$

4 Which equation is best represented by the accompanying graph?



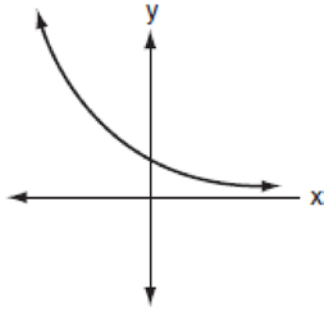
- 1) $y = 6^x$
- 2) $y = 6x^2$
- 3) $y = 6x + 1$
- 4) $y = -x^2 + 1$

5 The graph below can be represented by which equation?



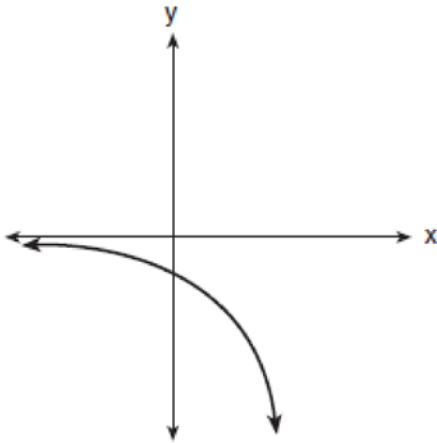
- 1) $y = 2^x$
- 2) $y = x^2 + 2$
- 3) $y = 2^{x+1}$
- 4) $y = 2^x + 1$

- 6 Which equation best represents the accompanying graph?



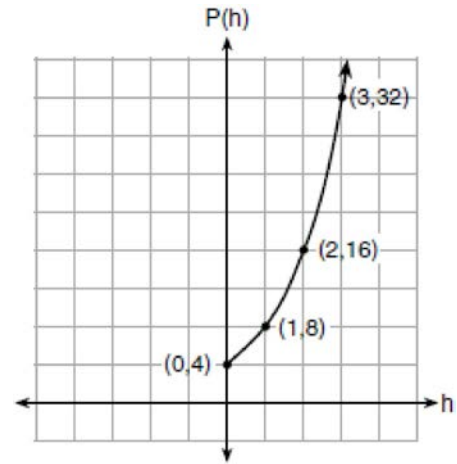
- 1) $y = 2^x$
- 2) $y = x^2 + 2$
- 3) $y = 2^{-x}$
- 4) $y = -2^x$

- 7 Which equation is represented by the accompanying graph?



- 1) $y = 2^x$
- 2) $y = -2^x$
- 3) $y = 2^{-x}$
- 4) $y = x^2 - 2$

- 8 Vinny collects population data, $P(h)$, about a specific strain of bacteria over time in hours, h , as shown in the graph below.



Which equation represents the graph of $P(h)$?

- 1) $P(h) = 4(2)^h$
- 2) $P(h) = \frac{46}{5}h + \frac{6}{5}$
- 3) $P(h) = 3h^2 + 0.2h + 4.2$
- 4) $P(h) = \frac{2}{3}h^3 - h^2 + 3h + 4$

- 9 The table below represents the function F .

x	3	4	6	7	8
$F(x)$	9	17	65	129	257

The equation that represents this function is

- 1) $F(x) = 3^x$
- 2) $F(x) = 3x$
- 3) $F(x) = 2^x + 1$
- 4) $F(x) = 2x + 3$

- 10 Which equation could represent the relationship between the x and y values shown in the accompanying table?

x	y
0	2
1	3
2	6
3	11
4	18

- 1) $y = x + 2$
 - 2) $y = x^2 + 2$
 - 3) $y = x^2$
 - 4) $y = 2^x$
- 11 Which function is shown in the table below?

x	$f(x)$
-2	$\frac{1}{9}$
-1	$\frac{1}{3}$
0	1
1	3
2	9
3	27

- 1) $f(x) = 3x$
 - 2) $f(x) = x + 3$
 - 3) $f(x) = -x^3$
 - 4) $f(x) = 3^x$
- 12 Which equation models the data in the accompanying table?

Time in hours, x	0	1	2	3	4	5	6
Population, y	5	10	20	40	80	160	320

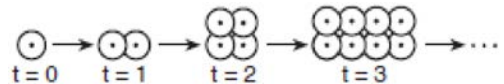
- 1) $y = 2x + 5$
- 2) $y = 2^x$
- 3) $y = 2x$
- 4) $y = 5(2^x)$

- 13 A laboratory technician studied the population growth of a colony of bacteria. He recorded the number of bacteria every other day, as shown in the partial table below.

t (time, in days)	0	2	4
$f(t)$ (bacteria)	25	15,625	9,765,625

Which function would accurately model the technician's data?

- 1) $f(t) = 25^t$
 - 2) $f(t) = 25^{t+1}$
 - 3) $f(t) = 25t$
 - 4) $f(t) = 25(t+1)$
- 14 If a population of 100 cells triples every hour, which function represents $p(t)$, the population after t hours?
- 1) $p(t) = 3(100)^t$
 - 2) $p(t) = 100(3)^t$
 - 3) $p(t) = 3t + 100$
 - 4) $p(t) = 100t + 3$
- 15 The accompanying diagram represents the biological process of cell division.



If this process continues, which expression best represents the number of cells at any time, t ?

- 1) $t + 2$
- 2) $2t$
- 3) t^2
- 4) 2^t

F.LE.A.2: Families of Functions 1a
Answer Section

1	ANS: 4	REF: 060314b
2	ANS: 3	REF: 080925ia
3	ANS: 3	REF: 081118ia
4	ANS: 4	REF: 060703b
5	ANS: 4	REF: fall9902b
6	ANS: 3	REF: 010701b
7	ANS: 2	REF: 080901b
8	ANS: 1	REF: 061707ai
9	ANS: 3	REF: 061415ai
10	ANS: 2	REF: 010113a
11	ANS: 4	REF: 011616ai
12	ANS: 4	REF: 060411b
13	ANS: 2	REF: 061513ai
14	ANS: 2	REF: 081714ai
15	ANS: 4	REF: 060909b