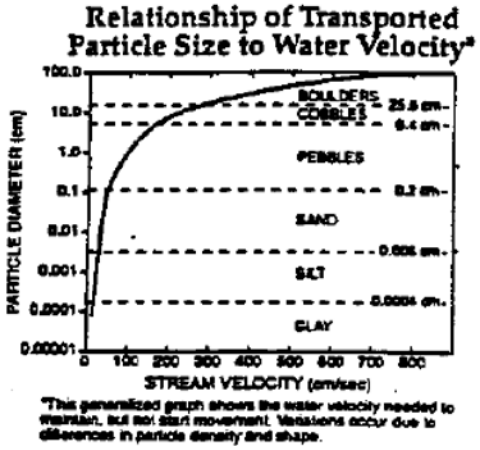
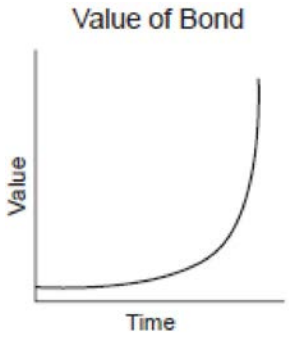
F.LE.A.2: Families of Functions 2

1 The graph below represents the relationship of transported particle size to water velocity? The graph best models which type of function?



1) linear
2) quadratic
3) logarithmic
4) trigonometric

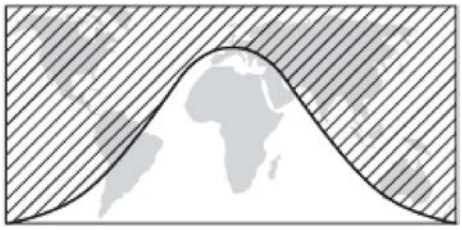
2 The accompanying graph represents the value of a bond over time.



Which type of function does this graph best model?

1) trigonometric
2) logarithmic
3) quadratic
4) exponential

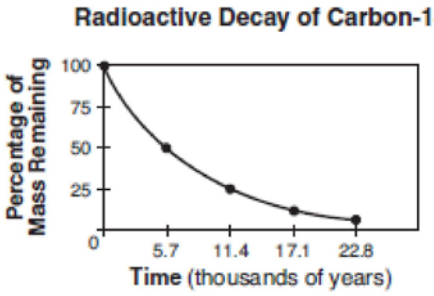
3 The shaded portion of the accompanying map indicates areas of night, and the unshaded portion indicates areas of daylight at a particular moment in time.



Which type of function best represents the curve that divides the area of night from the area of daylight?

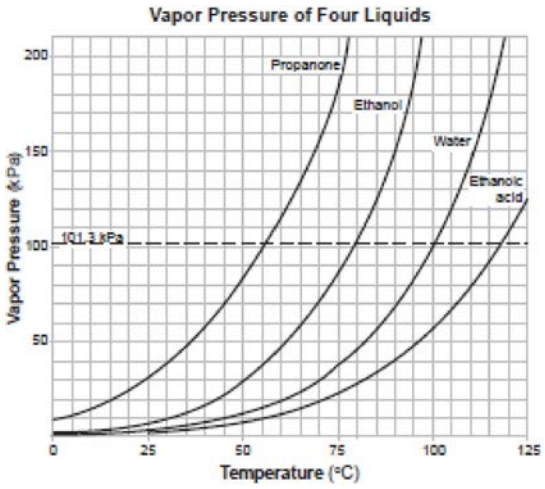
1) quadratic
2) cosine
3) tangent
4) logarithmic

4 Which type of function could be used to model the data shown in the accompanying graph?



1) exponential
2) quadratic
3) trigonometric
4) linear

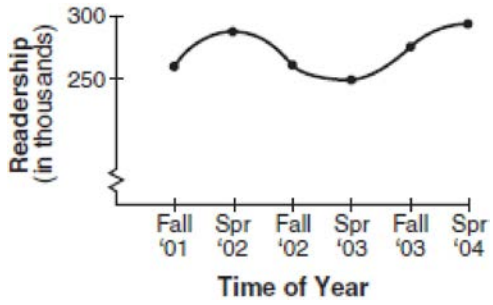
5 The family of curves shown in the accompanying graph illustrates the transformations of a function.



Which type of function could be the original function?

1) linear
2) tangent
3) exponential
4) sinusoidal

6 The accompanying graph shows the average daily readership, in thousands, of the newspaper "El Diario La Prensa."



Which type of function best represents this graph?

1) exponential
2) logarithmic
3) trigonometric
4) quadratic

7 Perry invested in property that cost him $1500. Five years later it was worth $3000, and 10 years from his original purchase, it was worth $6000. Assuming the growth rate remains the same, which type of function could he create to find the value of his investment 30 years from his original purchase?

1) exponential function
2) linear function
3) quadratic function
4) trigonometric function

8 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) $f(x) = 3^x$

9 Which table best represents an exponential relationship?

1)

x	y
1	8
2	4
3	2
4	1
5	$\frac{1}{2}$

2)

x	y
8	0
4	1
0	2
–4	3
–8	4

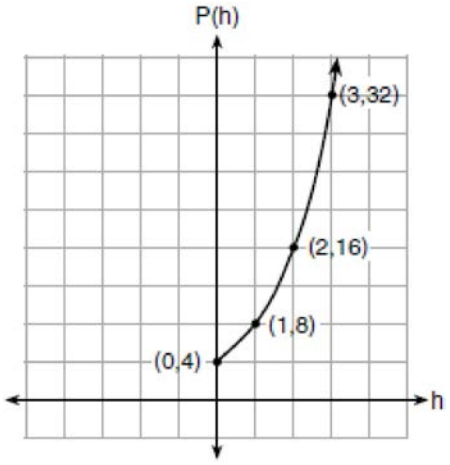
3)

x	y
0	0
1	1
2	4
3	9
4	16

4)

x	y
1	1
2	8
3	27
4	64
5	125

10 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 $P(h)$?

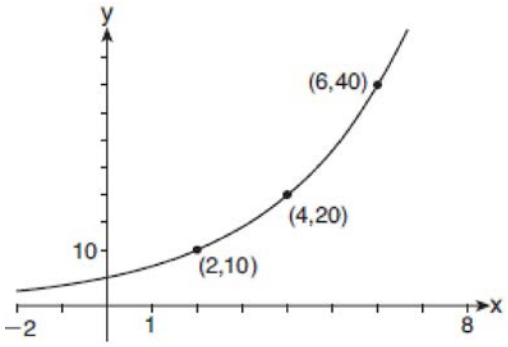
1) $P(h) = 4(2)^h$

2) $P(h) = \frac{46}{5}h + \frac{6}{5}$

3) $P(h) = 3h^2 + 0.2h + 4.2$

4) $P(h) = \frac{2}{3}h^3 - h^2 + 3h + 4$

11 The graph of $y = f(x)$ is shown below.



Which expression defines $f(x)$?

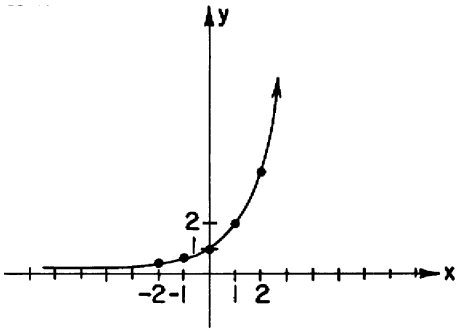
1) $2x$

2) $5(2^x)$

3) $5(2^{\frac{x}{2}})$

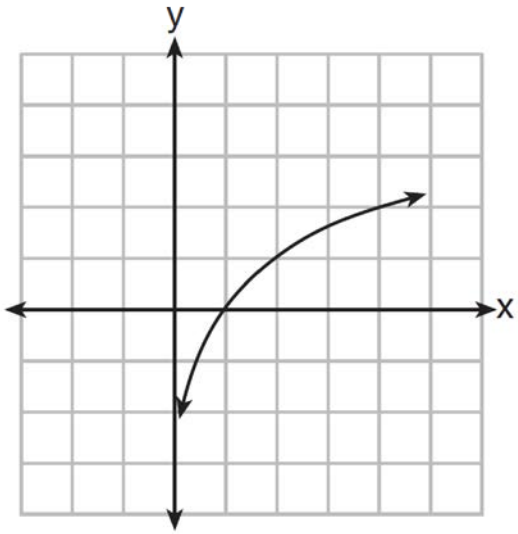
4) $5(2^{2x})$

12 Which is the equation of the graph shown below?



1) $y = \log_2 x$
2) $y = -\log_2 x$
3) $y = 2^x$
4) $y = 2^{-x}$

13 Which equation is represented by the accompanying graph?



1) $y = 2^x$
2) $y = 2^{-x}$
3) $y = \log x$
4) $y = \log_2 x$

14 Four points on the graph of the function f(x) are shown below.

$\{(0,1),(1,2),(2,4),(3,8)\}$

Which equation represents f(x)?

1) $f(x) = 2^x$
2) $f(x) = 2x$
3) $f(x) = x + 1$
4) $f(x) = \log_2 x$

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

1 ANS: 3 REF: fall9901b
2 ANS: 4 REF: 010203b
3 ANS: 2 REF: 010502b
4 ANS: 1 REF: 080710b
5 ANS: 3 REF: 080808b
6 ANS: 3 REF: 060913b
7 ANS: 1 REF: 081903aii
8 ANS: 4 REF: 011616ai
9 ANS: 1
2) linear, 3) quadratic, 4) cubic

REF: 061920aii
10 ANS: 1 REF: 061707ai
11 ANS: 3 REF: 061906aii
12 ANS: 3 REF: 088629siii
13 ANS: 4 REF: 061016b
14 ANS: 1 REF: 061004a2