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

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

   ![Graph of Relationship of Transported Particle Size to Water Velocity]

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

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

   ![Graph of Value of Bond]

   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.

   ![Map with Shaded and Unshaded Areas]

   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?

   ![Graph of Radioactive Decay of Carbon-14]

   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 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) \( 5(2^{-x}) \)

8 Which is the equation of the graph shown below?

1) \( y = \log_2 x \)
2) \( y = -\log_2 x \)
3) \( y = 2^x \)
4) \( y = 2^{-x} \)
9 Which equation is represented by the accompanying graph?

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

10 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) \( f(x) = \log_2 x \)

11 Which table best represents an exponential relationship?

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12 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
F.L.E.A.2: Families of Functions 2a
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: 3    REF: 061906a
8    ANS: 3    REF: 088629s
9    ANS: 4    REF: 061016b
10   ANS: 1    REF: 061004a
11   ANS: 1
      2) linear, 3) quadratic, 4) cubic
      REF: 061920a
12   ANS: 1    REF: 081903a