

F.IF.C.7: Graphing Exponential Functions 1

- 1 The graph of the equation $y = m^x$ passes through the point
 - 1) $(1, m)$
 - 2) $(0, m)$
 - 3) $(m, 0)$
 - 4) $(m, 1)$

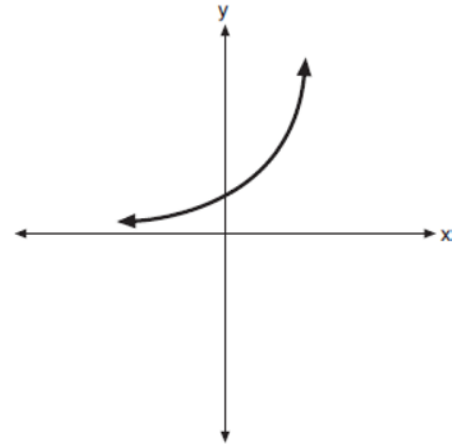
- 2 The graph of the equation $y = 2^x$ intersects
 - 1) the x -axis, only
 - 2) the y -axis, only
 - 3) the x -axis and the y -axis
 - 4) neither the x -axis nor the y -axis

- 3 The graph of the function $f(x) = 3^x$ lies in which quadrant(s)?
 - 1) I, only
 - 2) I and II
 - 3) I and III
 - 4) I and IV

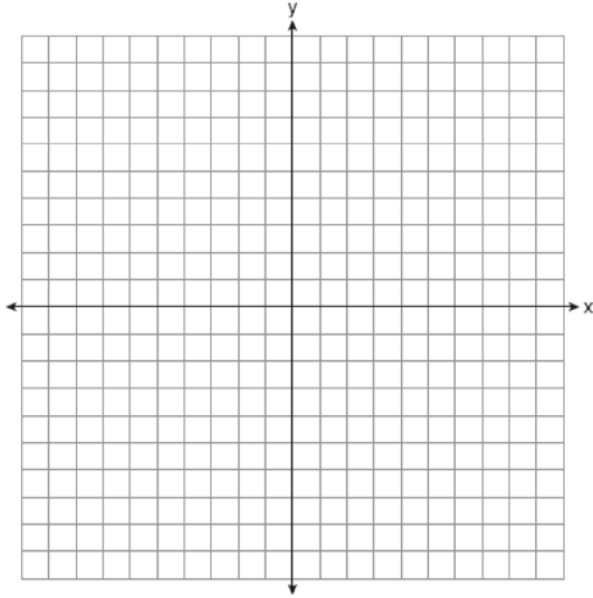
- 4 Which transformation of $y = 2^x$ results in the function $y = 2^x - 2$?
 - 1) $T_{0,-1}$
 - 2) $T_{0,-2}$
 - 3) $r_{y\text{-axis}}$
 - 4) $r_{x\text{-axis}}$

- 5 Theresa is comparing the graphs of $y = 2^x$ and $y = 5^x$. Which statement is true?
 - 1) The y -intercept of $y = 2^x$ is $(0, 2)$, and the y -intercept of $y = 5^x$ is $(0, 5)$.
 - 2) Both graphs have a y -intercept of $(0, 1)$, and $y = 2^x$ is steeper for $x > 0$.
 - 3) Both graphs have a y -intercept of $(0, 1)$, and $y = 5^x$ is steeper for $x > 0$.
 - 4) Neither graph has a y -intercept.

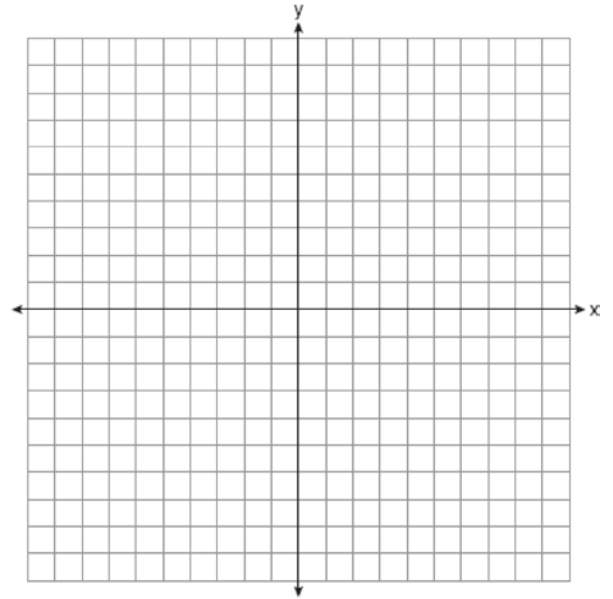
- 6 The graph of the function $f(x) = a^x$ is shown on the accompanying set of axes. On the same set of axes, sketch the reflection of $f(x)$ in the y -axis. State the coordinates of the point where the graphs intersect.



- 7 On the set of axes below, draw the graph of $y = 2^x$ over the interval $-1 \leq x \leq 3$. Will this graph ever intersect the x -axis? Justify your answer.

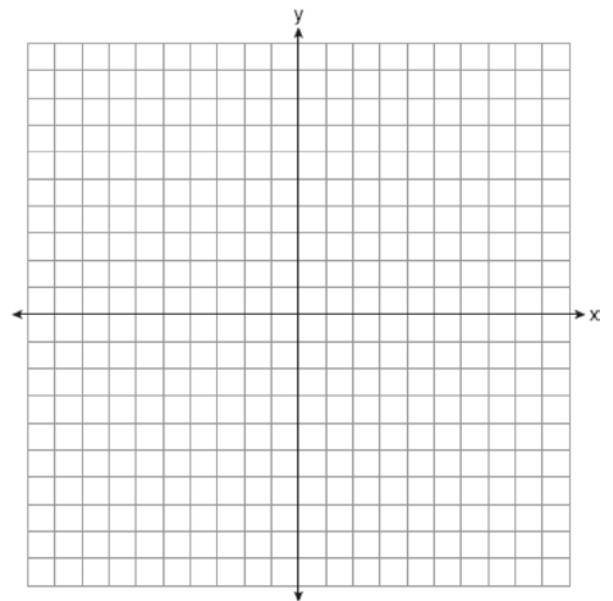


- 8 Graph the function $f(x) = 2^x - 7$ on the set of axes below.



If $g(x) = 1.5x - 3$, determine if $f(x) > g(x)$ when $x = 4$. Justify your answer.

- 9 On the set of axes below, graph $y = 3^x$ over the interval $-1 \leq x \leq 2$.



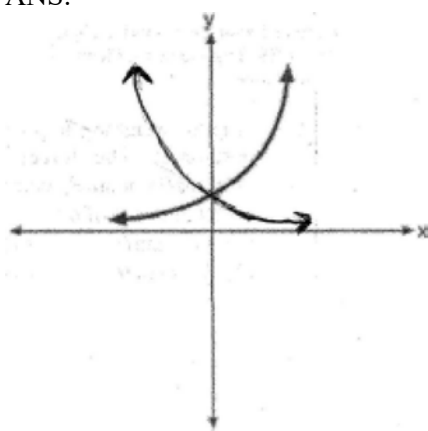
F.IF.C.7: Graphing Exponential Functions 1 Answer Section

- 1 ANS: 1 REF: 011720a2
 2 ANS: 2 REF: 068430siii
 3 ANS: 2 REF: 088434siii
 4 ANS: 2 REF: 080801b
 5 ANS: 3

As originally written, alternatives (2) and (3) had no domain restriction, so that both were correct.

REF: 061405a2

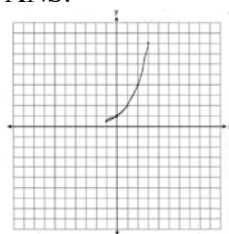
- 6 ANS:



(0,1)

REF: 080721b

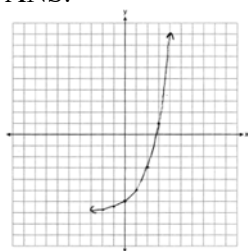
- 7 ANS:



The graph will never intersect the x -axis as $2^x > 0$ for all values of x .

REF: 080835ia

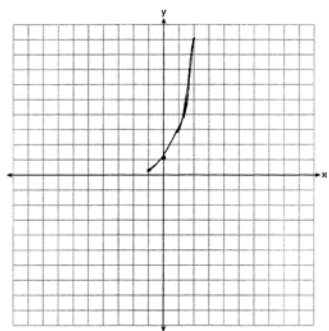
- 8 ANS:



Yes, $f(4) > g(4)$ because $2^4 - 7 > 1.5(4) - 3$.

REF: 011929ai

9 ANS:



REF: 081233ia