

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

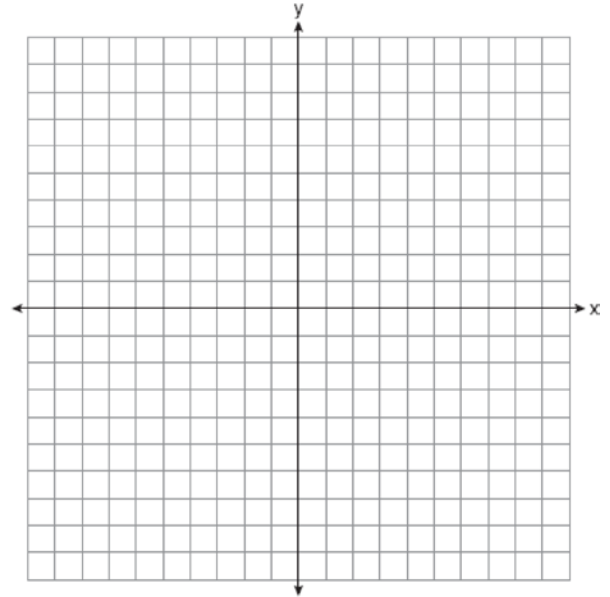
- 1 The graph of the equation  $y = m^x$  passes through the point
- 1)  $(1, m)$
  - 2)  $(0, m)$
  - 3)  $(m, 0)$
  - 4)  $(m, 1)$

- 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

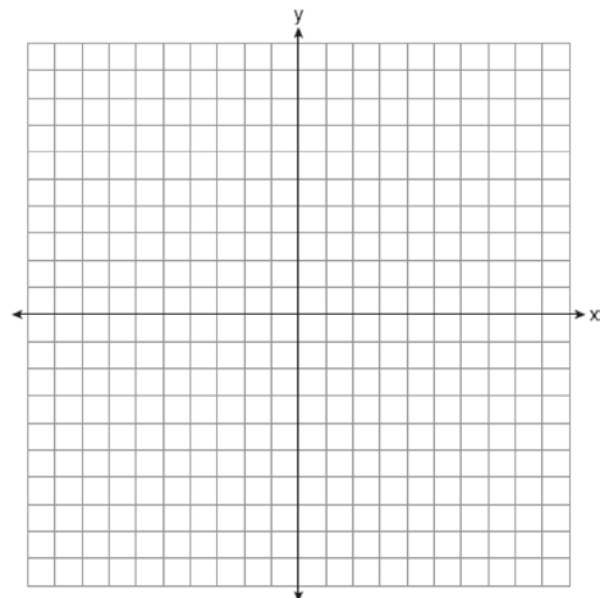
- 3 The graph of the function  $f(x) = 3^x$  lies in which quadrant(s)?
- 1) I, only
  - 2) I and II
  - 3) I and III
  - 4) I and IV

- 4 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.

- 5 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.



- 6 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

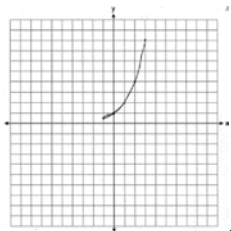
3 ANS: 2 REF: 088434siii

4 ANS: 3

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

REF: 061405a2

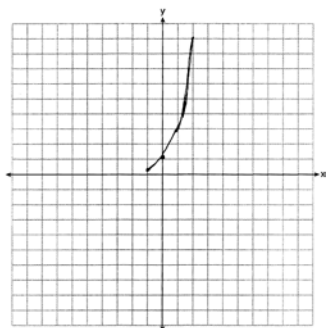
5 ANS:



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

REF: 080835ia

6 ANS:



REF: 081233ia