1. The graph of the equation \( y = mx \) 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. 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.
6 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.

7 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.

8 On the set of axes below, graph \( y = 3^x \) over the interval \(-1 \leq x \leq 2\).
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:

   (0,1)
   REF: 080721b
6. ANS:
   The graph will never intersect the x-axis as $2^x > 0$ for all values of $x$.
   REF: 080835ia
7. ANS:
   Yes, $f(4) > g(4)$ because $2^4 - 7 > 1.5(4) - 3$.
   REF: 011929ai
8 ANS:

REF: 081233ia