Topic 7: Graphing in the Coordinate Plane

Questions 1 – 5 Graph the equation.
1. \( y = 4x - 2 \)
2. \( y = \frac{1}{3}x + 1 \)
3. \( y = -\frac{1}{2}x - 6 \)
4. \( x = 7 \)
5. \( y = -4 \)

Questions 6 – 9 Determine the slope of the line passing through the given points.
6. \((4, -10)\) and \((8, 12)\)
7. \((-7, 0)\) and \((-7, 10)\)
8. \((-6, 5)\) and \((0, 5)\)
9. \((-1, 5)\) and \((7, -11)\)

Questions 10 – 12 Determine the x- and y-intercepts of the graph of the given line.
10. \( y = 3x + 4 \)
11. \( y = -x + 8 \)
12. \( x = -2y - 5 \)

Questions 13 – 15 Graph the exponential equation.
13. \( y = 6^x \)
14. \( y = 5^{-x} \)
15. \( y = \left(\frac{1}{4}\right)^x \)
16. Identify the graph of the exponential equation $y = 4.5^x$.

17. Which of the following is the equation for the given graph?

(a) $y = 2^x$
(b) $y = \left(\frac{1}{4}\right)^x$
(c) $y = 2^{-x}$
(d) $y = 4^x$
18. Over what interval of $x$ is the graph of the line below the graph of the exponential curve? 
*Express final answer as an open interval.*

19. Over what interval of $x$ is the graph of the line above the graph of the exponential curve? 
*Express final answer as an open interval.*