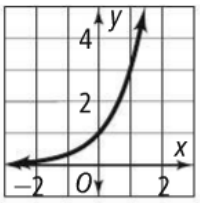
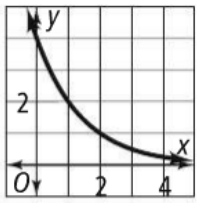
11. 48

12. 5

13.



14.



15. Answers may vary. Linear functions have a constant rate of change, while an exponential function has a constant finite ratio.

$f(x) = 3 \cdot 4^x$ for $x = -1$ as shown at the right. Describe and correct the student's mistake.

16. No; the value of the base cannot be negative.

17. The student did not use the order of operations correctly. You must evaluate the exponent before you multiply: $f(-1) = 3 \cdot 4^{-1} = 3 \cdot \frac{1}{4} = \frac{3}{4}$.

18. {0.04, 0.2, 1, 5, 25, 125}; increase

19. {0.16, 0.4, 1, 2.5, 6.25, 15.625}; increase

20. {100, 10, 1, 0.1, 0.01, 0.001}; decrease

21. {0.3125, 1.25, 5, 20, 80, 320}; increase

22. {4, 2, 1, 0.5, 0.25, 0.125}; decrease

23. {0.015625, 0.125, 1, 8, 64, 512}; increase

24. {0.04, 0.4, 4, 40, 400, 4000}; increase

EVENS ONLY on 18-24

35. They are the same.

36. $f(x) = 200x^2$

37. $y = 3^x$

38. $f(x) = 100x^2$