

## Answers to HW39: Exponential vs. Linear Functions

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|---|-----------------------------------|---|---|
| 1) Answers will vary  | 2) Linear<br>$f(x) = 300x + 1000$ | 3) Exponential<br>$f(x) = 4000 \cdot 1.34^x$                      | 4) Exponential<br>$f(x) = 500 \cdot 2^x$                        |
| 5) Linear<br>$f(x) = 20x + 500$                                 | 6) Linear<br>$f(x) = 0.52x + 145$ | 7) Exponential<br>$f(x) = 50000 \cdot \left(\frac{1}{2}\right)^x$ | 8) Exponential<br>$f(x) = 450 \cdot \left(\frac{1}{2}\right)^x$ |
| 9) Linear<br>$f(x) = 0.5x + 2$                                  | 10) Linear<br>$f(x) = 2x + 17$    | 11) Neither   | 12) Exponential<br>$f(x) = 2 \cdot 3^x$                         |
| 13) Exponential<br>$f(x) = 64 \cdot \left(\frac{1}{2}\right)^x$ | 14) Linear<br>$f(x) = -2x - 8$    | 15) Exponential<br>$f(x) = 128 \cdot \left(\frac{1}{2}\right)^x$  | 16) Linear<br>$f(x) = -5x + 1$                                  |
| 17) Exponential<br>$f(x) = 4 \cdot 3^x$                         | 18) Linear<br>$f(x) = -2x + 10$   | 19) Neither   |   |
| 20) Option 1: $f(x) = x$<br>Option 2: $f(x) = 0.02 \cdot 2^x$   | 21) Option 1                      | 22) Option 2  |   |
| 23) 9 bags  | 24) $12b^7$                       | 25) $30n^{10}$  | 26) $256n^{12}$   |
| 27) $\frac{1}{x^{10}}$  | 28) $\frac{v^3}{2}$               | 29) $x^2$   |   |