Interpreting Functions and Parameters

Algebra 1 •Section 11.4

Name: _____	Date: _____	Score: _____ / 12

Quick Review and Helpful Hints

Exponential models multiply by a constant factor over equal input intervals. Compare the initial value, multiplier, and long-term behavior before deciding what the model means.

▷ **Example:** Evaluate $100(1.05)^2$.
Work: Square the growth factor: $1.05^2 = 1.1025$. Then multiply: $100(1.1025) = 110.25$.

★ **Answer:** 110.25

Practice Problems

Solve each problem. Show enough work that another student could follow your thinking.

1. In $y = mx + b$, what does m represent?

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2. In $y = mx + b$, what does b represent?

_____

3. In $A = 500(1.06)^t$, what is 500?

_____

4. In $A = 500(1.06)^t$, what percent change?

_____

5. In $h = -16t^2 + 48t + 6$, what does 6 represent?

_____

6. In $C = 35 + 12x$, what does 35 represent?

_____

7. In $C = 35 + 12x$, what does 12 represent?

_____

8. In $P = -2(x - 4)^2 + 30$, what is the vertex?

_____

9. In $y = a(b)^x$, what does $b > 1$ mean?

_____

10. In $y = a(b)^x$, what does $0 < b < 1$ mean?

_____

Word Problems

11. A phone bill is $B = 22 + 0.10t$. Interpret 0.10.

_____

12. A medicine model is $M = 80(0.75)^h$. Interpret 0.75.

_____

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Answer Keys

1. Slope/rate of change
2. Initial value/y-intercept
3. Initial amount
4. 6% growth
5. Initial height
6. Fixed/startup cost
7. Cost per unit
8. $(4, 30)$
9. Growth
10. Decay
11. 10 cents per text
12. 75% remains each hour

Step-by-Step Explanations

1. Think of m as the step size: it's how far y moves every time x goes up by 1.
2. Set $x = 0$ and the mx part disappears, leaving b as the starting height.
3. When $t = 0$ the growth factor is just 1, so 500 is the amount you begin with.
4. Split 1.06 into $1 + 0.06$ — the 0.06 tacked on is a 6% gain each period.
5. At $t = 0$ both t terms vanish, so 6 is the height the moment you start the clock.
6. That 35 is on the bill before you've added a single unit — the cost just to get going.
7. Every extra unit of x piles on another 12, so 12 is the price per unit.
8. Vertex form parks the turning point right out front — (h, k) reads straight off as $(4, 30)$.
9. A base above 1 nudges each output higher than the one before, so the function climbs.
10. A base squeezed between 0 and 1 trims a bit off each step, so the values keep shrinking.
11. The number multiplying t is the per-text rate — every additional text adds another 10 cents.
12. Multiplying by 0.75 keeps three-quarters around, which means 25% clears out every hour.

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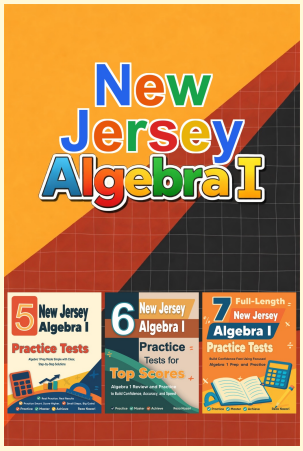

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