ALBERT

Name _____ Date _____

Interpreting Expressions Worksheet

Algebra 1 · Common Core HSA-SSE.A.1

> Interpret expressions that represent a quantity in terms of its context. a. Interpret parts of an expression, such as terms, factors, and coefficients. b. Interpret complicated expressions by viewing one or more of their parts as a single entity. For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P.

Practice

Builds the skill step by step.

1. In $3x^2 + 5x - 7$, what is the coefficient of x?

2. In $3x^2 + 5x - 7$, what is the constant term?

3. How many terms are in $3x^2 + 5x - 7$?

4. What are the factors of $4(x + 2)$?

   A. 4 and $(x + 2)$

   B. 4 and x

   C. x and 2

   D. 4x and 2

5. In $A = P(1 + r)^n$ for a savings account, what does P represent?

   A. the interest rate

   B. the starting amount

   C. the number of years

   D. the final amount

6. A plumber charges $50 + 12h$ dollars for h hours. What does 12 represent?

   A. the starting fee

   B. the number of hours

   C. the cost per hour

   D. the total cost

7. What is the leading coefficient of $-2x^3 + x - 9$?

8. In $C = 2\pi r$, what is the coefficient of r?

   A. 2

   B. π

   C. r

   D. 2π

9. In $1000(1.05)^t$, by what percent does the amount grow each year?

10. A car rental costs $C = 25 + 0.4m$ dollars for m miles. What is the cost for 0 miles?

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On Level

Grade-level practice.

1. In $1500(0.9)^t$, by what percent does the amount decrease each year?

2. What are the factors of $(x + 3)(x - 4)$?

   A. $(x + 3)$ and $(x - 4)$

   B. x and 3

   C. x, 3 and 4

   D. x and -4

3. In $A = 200(1.03)^t$, what is A when $t = 0$?

4. How can you read $5(n - 2) + 7$ by treating $(n - 2)$ as one quantity?

   A. 5n plus 7

   B. 5 times a quantity, plus 7

   C. $n - 2$ plus 12

   D. 5 plus n

5. The perimeter of a rectangle is $2(l + w)$. If $l + w = 13$, what is the perimeter?

6. A club charges $20 + 3.5n$ dollars for n books. Explain what 20 and 3.5 mean.

7. A sale price is $0.8p$, where p is the original price. What percent is the discount?

8. In $A = P(1 + r)^n$, what happens to A if P doubles and r and n stay the same?

   A. A stays the same.

   B. A is squared.

   C. A doubles.

   D. A is cut in half.

9. A ball's height is $h = -16t^2 + 64t + 5$. What is its starting height?

10. What is the minimum value of $3(x - 1)^2 + 4$?

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Challenge

Multi-step and word problems that stretch it.

1. For 1.06^{t}, when t increases by 1, by what number is the amount multiplied?

2. An account grows by $(1 + 0.12/12)^{12t}$. What is the monthly interest rate, as a percent?

3. What is the greatest common factor of $2x^{2} + 8x$?

   A. 2

   B. x

   C. 8x

   D. 2x

4. A stamp collector has $100 - 4x$ stamps left after x days. How many stamps does she use each day?

5. A box has volume $V = x(10 - 2x)^{2}$. What is V when $x = 2$?

6. Which expression shows a price p after a 15% increase?

   A. 1.15p

   B. 0.15p

   C. p + 15

   D. 0.85p

7. A trapezoid's area is $0.5(b_1 + b_2)h$. If $b_1 + b_2 = 10$ and $h = 4$, what is the area?

8. A car's value is $8000(0.85)^t$ dollars after t years. Explain what 8000 and 0.85 mean.

9. What is the minimum value of $(x - 5)^2 + 2$?

10. For large values of x, which is greater: 2^x or x^2?

    A. x^2

    B. 2^x

    C. They are always equal.

    D. It depends only on the sign.