ALBERT

Name _____ Date _____

Writing Expressions with Variables Worksheet

Grade 6 · Common Core 6.EE.B.6

> Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set.

Practice

Builds the skill step by step.

1. Write an expression for the cost of n pencils if each pencil costs $2.

2. Write an expression for 5 more than a number x.

3. Jo is 3 years older than her brother, who is b years old. Which expression gives Jo's age?

   A. $b - 3$

   B. $b + 3$

   C. $3b$

   D. $\frac{b}{3}$

4. A pizza is cut into 8 equal slices. Write an expression for the number of slices in p pizzas.

5. Write an expression for a number y decreased by 7.

6. Sam has m marbles and gives away 4. Write an expression for the marbles he has left.

7. A ribbon d inches long is cut into 3 equal pieces. Which expression gives the length of each piece?

   A. 3d

   B. $d - 3$

   C. $\frac{d}{3}$

   D. $d + 3$

8. Write an expression for twice a number k.

9. A class has g girls and 12 boys. Write an expression for the total number of students.

10. Write an expression for the perimeter of a square with side length s.

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On Level

Grade-level practice.

1. A gym charges a $20 sign-up fee and $10 per month. Write an expression for the cost of m months.

2. Write an expression for 6 less than three times a number n.

3. Ana reads p pages each night for 5 nights, then reads 12 more pages. Which expression gives the total?

   A. 5p + 12

   B. 5(p + 12)

   C. p + 17

   D. 12p + 5

4. Tickets cost $7 for adults and $4 for children. Write an expression for the cost of a adult tickets and c child tickets.

5. A rectangle is 3 units longer than it is wide. If the width is w, write an expression for the length.

6. Write an expression for the perimeter of the rectangle in problem 5, in terms of w.

7. A phone plan costs $30 plus $0.05 per text t. Which expression gives the monthly cost?

   A. 30t + 0.05

   B. 0.05(30 + t)

   C. 30 + 0.05t

   D. 35t

8. Leo is half as old as his mom, who is m years old. Write an expression for Leo's age.

9. A store has 150 shirts and sells 9 per hour. Write an expression for the number left after h hours.

10. Write an expression for the sum of a number x and 4, divided by 2.

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Challenge

Multi-step and word problems that stretch it.

1. A taxi charges $3.50 to start plus $2.25 per mile. Write an expression for the cost of a ride of d miles, and find the cost of an 8-mile ride.

2. Three friends share the cost of a pizza that costs p dollars and a $6 drink pitcher equally. Write an expression for each friend's share.

3. The width of a rectangle is w. The length is 2 more than twice the width. Which expression gives the perimeter?

   A. 3w + 2

   B. 4w + 4

   C. 6w + 4

   D. 6w + 2

4. Maya has q quarters and twice as many dimes. Write an expression for the value of her coins in cents.

5. A tank holds 500 gallons and starts full. It drains at 12 gallons per minute while a hose adds 4 gallons per minute. Write an expression for the gallons in the tank after t minutes.

6. In a set of consecutive whole numbers, the first is n. Write an expression for the sum of the first three.

7. Raj writes $5 - x$ for "5 less than a number x." What mistake did he make, and what is the correct expression?

8. A school orders b boxes of markers with 12 markers each and 5 extra markers. Write an expression and find the total for 9 boxes.

9. A plant is 6 cm tall and grows 1.5 cm per week. Write an expression for its height after w weeks.

10. The variable x can represent any number of hours from 0 to 8. A worker earns $14 per hour. Write an expression for her earnings and give the greatest possible value.