Name _____ Date _____

3.2 Practice B

Write the phrase as an expression.

1. 8 more than 5
2. 11 fewer than 24
3. 6 times a number y
4. the quotient of a number n and 7
5. the sum of 8 and a number e
6. twice a number n plus 6
7. a number x decreased by 13
8. 7 less than 3 times a number m
9. the total of a number f and 3
10. the difference of 25 and a number w
11. You have two cats. Each cat has a litter of 6 kittens. Write an expression that describes the total number of cats and kittens you have.
12. The total of your dinner bill plus tip is \$16.00. You left a \$3.20 tip. Write an expression to describe this situation.

Write the phrase as an expression. Then evaluate when $x = 8$ and $y = 20$.

13. fifteen more than the quotient of 24 and a number x
14. the sum of a number y and 30, all divided by 5
15. the product of 2 and the sum of a number x and 9
16. In the sequence, 2, 5, 8, 11, ..., which expression describes the number after x? Explain your choice.

A. $x + 3$ **B.** $x - 3$ **C.** $3x$ **D.** $x \div 3$

17. You are baking cookies.

Recipe
2 cups sugar
$1\frac{1}{2}$ cups flour
2 eggs

   a. You make one and one-half batches of cookies. How many eggs have you used?

   b. Each batch makes 24 cookies. You make x batches of cookies, but eat 5 cookies as you are baking. Write an expression for the number of cookies that you have.

   c. You make 3 batches of cookies to make bags for a sale. You put 5 cookies in each bag. Given $14(5) + 2 = 3(24)$, what do the terms represent?

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3.3 Practice B

Simplify the expression. Explain each step.

1. $16 + (f + 4)$
2. $(3y) \cdot 9$
3. $5(8y)$
4. $(0 + n) + 15$
5. $(21 \cdot y) \cdot 1$
6. $10 \cdot x \cdot 4$
7. $34 \cdot y \cdot 0$
8. $35 + (p + 5)$

Copy and complete the statement using the specified property.

9. Commutative Property of Addition: $h + 11 =$?
10. Commutative Property of Multiplication: $12 \cdot k =$?
11. Associative Property of Addition: $21 + (9 + 8) =$?
12. Associative Property of Multiplication: $12 \cdot (5 \cdot 4) =$?
13. Multiplication Property of One: $18 \cdot w \cdot 1 =$?
14. Addition Property of Zero: $26 + c + 0 =$?
15. Describe and correct the error made in identifying the property.

✗ $(2 \cdot x) \cdot 4 = 2 \cdot (x \cdot 4)$ Commutative Property of Multiplication

16. On a bike trip, you traveled 21 miles on the first day, 19 miles on the second day, and n miles on the third day.
    a. Write an expression for the number of miles traveled in three days.
    b. Simplify the expression. Explain each step.
17. You practiced your guitar 37 minutes on Monday, t minutes on Wednesday, and 29 minutes on Friday. Write and simplify an expression for the number of minutes you practiced.

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3.4 Practice A

Use the Distributive Property and mental math to find the product.

1. 5×23
2. 6×25
3. $9(54)$
4. $7(59)$

Use the Distributive Property to find the product.

5. $\frac{1}{3} \times 2\frac{3}{4}$
6. $\frac{2}{5} \times 3\frac{1}{2}$
7. $\frac{3}{8} \times 5\frac{2}{3}$

Use the Distributive Property to simplify the expression.

8. $4(x + 6)$
9. $8(c - 5)$
10. $7(2y + 8)$
11. $9(e - 4)$
12. $6(4 + n)$
13. $7(3 + x + 4)$

14. Describe and correct the error in rewriting the expression.

$\times$ $5(x + 9) = x + 45$

15. Each day you do homework for m minutes and watch TV for 30 minutes. Which expression can you use to find how many minutes you do both activities in 5 days? Explain your reasoning.

A. $5m + 30$ B. $5(m + 6)$ C. $5(m + 30)$ D. $m(5 + 30)$

16. The school office uses r reams of white paper and 3 reams of blue paper every day. Use the Distributive Property to write and simplify an expression for how much paper the school office uses in five days.

Simplify the expression.

17. $9(w + 6) + 4$
18. $5(3 + m) - 7$
19. $2m + 7 + 9m$
20. $f + 4(f - 2)$
21. $\frac{1}{2}x + \frac{3}{8}x + x$
22. $3.1(p - 2.7)$

23. Write and simplify expressions for the area and the perimeter of a rectangle.

The rectangle has width of 5 and length of $x+2$

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Extension 3.4 Practice

Factor the expression using the GCF.

1. $39 - 13$
2. $5 + 10$
3. $15 - 9$
4. $45 + 30$
5. $49 - 14$
6. $96 - 30$
7. $120 + 50$
8. $3x + 9$
9. $24x - 16$
10. $6x - 45$
11. $18x + 6$
12. $17x + 51$
13. $8x - 10y$
14. $27x - 18y$
15. $42x + 28y$

16. Which expression is not equivalent to $12x - 18$?

    A. $6(2x - 3)$ **B.** $2(6x - 9)$ **C.** $9(3x - 2)$ **D.** $3(4x - 6)$

17. Write five expressions that are equivalent to $20x + 100$.

18. The length of a rectangle is 6 centimeters and its area is $(6x + 18)$ square centimeters. Write an expression for the width.

19. You purchase 4 videos. The original price of each video is x dollars. You decide to purchase the Limited Edition versions of the videos for an additional cost. Your total cost is $(4x + 20)$ dollars. What can you conclude about the additional cost of the Limited Edition version of a video?