

1. Write using an exponent:

$$8 \times 8 \times 8 \times 8 = \underline{8^4}$$

$$20 \times 20 = \underline{20^2}$$

$$2 \times 2 \times 2 = \underline{2^3}$$

2. What is 5^3 written as a product of the same factor?

$$5^3 = \underline{5 \times 5 \times 5}$$

3. Use order of operations to evaluate.

$$5 + 4^2 \times 2 = \underline{37}$$

$$5 + \underbrace{16} \times 2$$

$$5 + 32$$

4. Evaluate.

$$9 + 8 \times 3 - (5 \times 2) =$$

$$9 + 8 \times 3 - 10 \quad \checkmark \underline{23}$$

$$9 + \underbrace{24} - 10$$

$$\underbrace{33} - 10$$

$$\checkmark \underline{23}$$

5. Evaluate.

$$28 + 6 \times 4 - 2 =$$

$$28 + \underbrace{24} - 2 \quad \checkmark \underline{50}$$

$$\underbrace{52} - 2$$

$$\checkmark \underline{50}$$

6. Evaluate.

$$78 - 2^4 \div (14 - 6) \times 2$$

$$\checkmark = \underline{74}$$

$$78 - 16 \div 8 \times 2$$

$$78 - \underbrace{2} \times 2$$

$$78 - 4$$

$$\checkmark \underline{74}$$

7. Evaluate if $a=9, b=3, c=\frac{1}{3}$.

$$ac \div (2b) = \underline{\frac{3}{6} = \frac{1}{2}}$$

$$9 \cdot \frac{1}{3} \div (2 \cdot 3)$$

$$\underbrace{3} \div \underbrace{6}$$

$$4b^2 \cdot 3 = \underline{108}$$

$$4 \cdot 3^2 \cdot 3$$

$$4 \cdot 9 \cdot 3 = 36 \cdot 3$$

8. Evaluate if $m=6, n=12$.

$$3n + 8m = \underline{84}$$

$$3 \cdot 12 + 8 \cdot 6$$

$$\underbrace{36} + \underbrace{48}$$

$$\checkmark \underline{84}$$

9. What is the value of $5 + 2n$ if $n = \frac{3}{4}$?

$$5 + \underbrace{2 \cdot \frac{3}{4}}_{1}$$

$$5 + \frac{3}{2} = \frac{10}{2} + \frac{3}{2} = \frac{13}{2}$$

$(6\frac{1}{2})$

10. Evaluate if $m=3$ and $n=7$.

$$n + 9 = \underline{16}$$

$$7 + 9$$

$$11m - 3n = \underline{12}$$

$$11 \cdot 3 - 3 \cdot 7$$

$$33 - 21$$

11. The cost of renting roller blades is \$4 plus \$3.50 for each hour rented. Write an expression that could be used to find the cost in dollars of renting roller blades for h hours.

$$\underline{4 + 3.50h}$$

12. Write an expression for each phrase.

15 miles less than Marie biked

$$\underline{m - 15}$$

4 times a number

$$\underline{4n}$$

13. At a state fair, each person pays \$8 for admission plus \$2 for each ride. Write an expression to find out how much I'd pay if I rode six rides at the fair. Then find the amount.

$$\underline{8 + 2 \cdot 6 = 8 + 12}$$

I spend \$20.

14. Which property is being shown?

$$8 + 2 = 2 + 8$$

Commutative

$$3(6 + 2) = 3 \cdot 6 + 3 \cdot 2$$

Distributive

15. Which property is being shown?

$$8 \cdot 1 = 8$$

Identity

$$2 \cdot (4 \cdot 3) = (2 \cdot 4) \cdot 3$$

Associative

16. Use the distributive property to rewrite the expression,

$$2(a + 10) = \underline{2a + 20}$$

$$3(4 + 2x) = \underline{12 + 6x}$$

Use loops!

17. Use the distributive property.

$$9(10 + x) = \underline{90 + 9x}$$

18. Factor.

$$54a + 24b =$$

$$55 + 88 =$$

19. Factor.

$$18x - 36y =$$

$$20xy + 10x =$$

20. Simplify the expression.

$$\underline{12x + 6 + 12x = 24x + 6}$$

$$\underline{2x + 11y + 14x = 16x + 11y}$$

$$\underline{18(4x) = 18 \cdot 4 \cdot x = 72x}$$