

Review Only!

Answer Key!

1

Quiz 1.1-1.3 Powers, Exponents, and Properties (20 Questions Total)

Name: Ms. Wang Section: _____ Start time: _____ End time: _____

Please copy the following sentence below as an agreement: *I understand and agree to show every step and explain my reasoning on all math work. Answers without work will receive a 50% deduction even if correct:*

Yes

Section A: Powers & Exponents

1. Write 3^4 as a product.

$$3 \times 3 \times 3 \times 3$$

2. Simplify 2^4 .

$$2 \times 2 \times 2 \times 2 = \boxed{16}$$

3. Evaluate $4^2 + 2^3$

$$4^2 = 4 \times 4 = 16 \quad 2^3 = 2 \times 2 \times 2 = 8$$
$$16 + 8 = \boxed{24}$$

4. Which is larger: 3^3 or 5^2 ? Show your work.

$$3^3 = 3 \times 3 \times 3 = 27 \quad 5^2 = 5 \times 5 = 25$$

Because $27 > 25$, so 3^3 is larger

5. Write 81 as a power of 3.

Asking $3^{\square} = 81$ Answer: $3 \times 3 \times 3 \times 3 = 81$

$$\boxed{3^4 = 81}$$

6. True or False: $3^3 = 9$? Explain.

$$3 \times 3 \times 3 = 9 \times 3 = \boxed{27}$$

False

Section B: Order of Operations (show me all steps)

7. $7 + 2 \times 4$

$$= 7 + 8 = \boxed{15}$$

- show me the order of operation way

8. $4 \times 6 - 8$

$$= \checkmark 24 - 8 = \boxed{16}$$

9. $-2(6 + 2) - 8$

$$= -2 \times \checkmark 8 - 8 = -16 - 8 = \boxed{-24}$$

10. $-3(7 - 9) - 1$

$$= -3 \times \checkmark (-2) - 1$$

$$= 6 - 1 = \boxed{5}$$

11. $(3 + 7) \div 2$

$$= 10 \div 2 = \boxed{5}$$

12. $5 + 2(5 - 10)$

$$= 5 + 2 \times \checkmark (-5) = 5 + (-10) = 5 - 10 = \boxed{-5}$$

13. $2 \times (3^2 - 7)$

$$= 2 \times (9 - 7) = 2 \times 2 = \boxed{4}$$

Section C: Properties of Operations (show me the reason, property name, and property formula for ALL QUESTIONS)

14. State the property shown: $(12+5)+3=12+(5+3)$

a. Reason:

b. Property name: *Associative (addition)*c. Formula: $(a+b)+c = a+(b+c)$

15. State the property shown: $3 \times (4 + 3) = 3 \times 4 + 3 \times 3$

distributive

$$a(b+c) = a \cdot b + a \cdot c$$

$$3 \times (4+3) = 3 \times 7 = 21$$

$$3 \times 4 + 3 \times 3 = 12 + 9 = 21$$

16. State the property shown: $5 \times 1 = 5$

Identity

$$A \times 1 = A$$

17. If $0+7 = 7+0$, which property is used? Why?

Commutative $A+B = B+A$

18. Simplify using the distributive property: $-2(7 - 2)$

$$\begin{aligned} &= -2 \times 7 - (-2 \times 2) \\ &= -14 - (-4) = -14 + 4 = \boxed{-10} \end{aligned}$$

19. Identify the property: $3 \times (2 \times 5) = (3 \times 2) \times 5$

Associative

$$A \cdot (B \cdot C) = (A \cdot B) \cdot C$$

20. State the property shown: $3+0 = 3$

Identity

$$A+0 = A$$

Extra Credit (3 points): Solve $3 - 2(5 + 3) + 3(2^3 - 1)$

$$= 3 - (2 \times 5 + 2 \times 3) + 3 \times (8 - 1)$$

$$= 3 - (10 + 6) + 3 \times 7$$

$$= 3 - 16 + 3 \times 7$$

$$= 3 - 16 + 21$$

$$= -13 + 21 = \boxed{8}$$

