

Unit 1 Practice Exam

Multiple Choice

Identify the choice that best completes the statement or answers the question.

- C 1. Solve the equation. $5x + 8 - 3x = 22$
- a. $x = 1.75$ $2x + 8 = 22$
 $\quad \quad \quad -8 \quad -8$
- b. $x = 3.75$ $2x = 14$
 $\quad \quad \quad x = 7$
- c. $x = 7$ $x = 7$
- d. $x = 15$

- B 2. Determine whether the equation is an identity or has no solution: $2(x + 4) = 2x + 8$
- a. No Solution
- b. Identity

$$2x + 8 = 2x + 8$$

Short Answer

Write an algebraic expression for the phrase.

3. the sum of
- g
- and 10

$$g + 10$$

4. the product of
- x
- and 2

$$2x$$

5. Evaluate the expression
- $(ab)^2$
- for
- $a = 2$
- and
- $b = 4$
- .

$$(2 \cdot 4)^2 = 8^2 = 64$$

Simplify the expression.

- 6.
- $6(10 + 5) \div (6 - 5)$

$$6(15) \div 1$$

$$90 \div 1 = 90$$

- 7.
- $3^3 \cdot 32 + 12 \div 4$

$$(27 \cdot 32) + (12 \div 4)$$

$$864 + 3 = 867$$

- 8.
- $13[6^2 \div (5^2 - 4^2) + 9]$

$$13[36 \div (25 - 16) + 9]$$

$$13[(36 \div 9) + 9]$$

$$13(4 + 9)$$

$$13(13)$$

$$169$$

$$9. \frac{2}{9} - \frac{8}{10} = \frac{-20}{90} - \frac{72}{90} = \frac{-92}{90} = \frac{-46}{45} = -1.02$$

$$10. |19 - 3| = |16| = 16$$

$$11. 2.4 - 1.4 - 5.26 + 2.3 - 1.75$$

$$-3.71$$

$$12. -5.9(-6.1)$$

$$+35.99$$

$$13. (-4)^5 = (-4)(-4)(-4)(-4)(-4)$$

$$-1024$$

$$14. -5^4 = -(5 \cdot 5 \cdot 5 \cdot 5)$$

$$-625$$

$$15. \frac{(-6)(-9)}{(-3)} = \frac{54}{-3} = -18$$

$$-1024$$

$$16. (-3 - 5)(-1) = 3 + 8 = 11$$

$$17. \text{ Evaluate the formula } V = \frac{Bh}{3} \text{ for } B = 15 \text{ in.}^2 \text{ and } h = 32 \text{ in.}$$

$$V = \frac{(15)(32)}{3} = \frac{480}{3} = 160 \text{ in.}^3$$

$$18. |-9.6|$$

$$9.6$$

$$19. \text{ Evaluate } |-x - 2y| \text{ for } x = -2 \text{ and } y = 4.$$

$$|-(-2) - 2(4)|$$

$$|2 - 8|$$

$$|-6| \rightarrow 6$$

20. Evaluate
- $b - 2a - c$
- for
- $a = -6$
- ,
- $b = 2$
- , and
- $c = -4$
- .

$$2 - 2(-6) - (-4)$$

$$2 + 12 + 4 \rightarrow 18$$

21. Evaluate
- $x(-y + z)$
- for
- $x = 2$
- ,
- $y = 2$
- , and
- $z = 5$
- .

$$2(-2 + 5)$$

$$2(3) \quad 6$$

- 22.
- $-40 \div (-4)$

$$\frac{-40}{-4} = 10$$

23. Evaluate
- $\frac{a}{b}$
- for
- $a = -2$
- and
- $b = -2$
- .

$$\frac{-2}{-2} = 1$$

24. Solve the equation.
- $-6 = \frac{x}{8} + 4$

$$-6 = \frac{x}{8} + 4$$

$$-4 \quad -4$$

$$-10 = \frac{x}{8}$$

$$x = -80$$

25. Solve the equation.
- $19 = -d + 13$

$$19 = -d + 13$$

$$-13 \quad -13$$

$$6 = -d$$

$$d = -6$$

26. Solve the equation.
- $6(y - 5) = 18$

$$6(y - 5) = 18$$

$$6y - 30 = 18$$

$$+30 \quad +30$$

$$6y = 48$$

$$y = 8$$

27. Solve the equation.
- $3x - 9 = 4x - 8$

$$3x - 9 = 4x - 8$$

$$-3x \quad -3x$$

$$-9 = 1x - 8$$

$$+8 \quad +8$$

$$-1 = x$$

$$x = -1$$

28. Solve the equation.
- $\frac{3}{8}x + 4 = 7$

$$\frac{3}{8}x + 4 = 7$$

$$-4 \quad -4$$

$$\frac{3}{8}x = 3$$

$$x = 8$$

29. Solve the proportion.
- $\frac{9}{2} = \frac{16}{x}$

$$\frac{9}{2} = \frac{16}{x}$$

$$\frac{9}{2} \cdot \frac{2}{2} = \frac{16}{x} \cdot \frac{2}{2}$$

$$\frac{18}{2} = \frac{32}{x}$$

$$9 = \frac{32}{x}$$

$$9x = 32$$

$$x = \frac{32}{9}$$

$$x = \frac{-32}{9} = -3\frac{5}{9} = -3.5$$

30. Solve the proportion.
- $\frac{x+5}{2} = \frac{6}{14}$

$$\frac{x+5}{2} = \frac{6}{14}$$

$$14(x+5) = 12$$

$$14x + 70 = 12$$

$$-70 \quad -70$$

$$14x = -58$$

$$\frac{14x}{14} = \frac{-58}{14}$$

$$x = \frac{-58}{14} \approx -4.14$$

31. The sum of two consecutive integers is 39. Write an equation that models this situation and find the values of the two integers.

Let $x = 1^{st}$ integer
 $x+1 = 2^{nd}$ integer

$$\begin{aligned} x + (x+1) &= 39 \\ 2x + 1 &= 39 \end{aligned}$$

32. $\frac{10+z}{2} = -3$

$$-6 = 10+z$$

$$-16 = z$$

33. $54 - 2 + 6m = 100$

$$52 + 6m = 100$$

$$-52$$

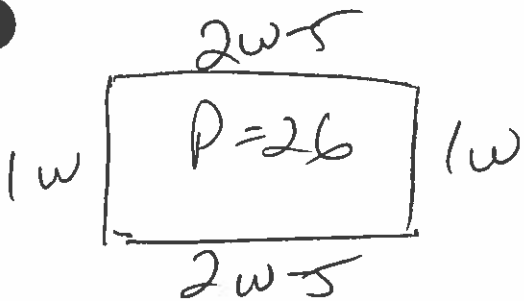
$$m = 8$$

$$\frac{2x = 38}{2}$$

$$x = 19, 20$$

34. The length of a rectangle is 5 centimeters less than twice its width. The perimeter of the rectangle is 26 cm. What are the dimensions of the rectangle?

Let $w = \text{width}$
 $2w - 5 = \text{length}$



$$(2w-5) + w + (2w-5) + w = 26$$

$$6w - 10 = 26$$

$$+10 \quad +10$$

$$6w = 36$$

$$w = 6 \text{ cm}$$

$$l = 2(6) - 5 = 12 - 5 = 7 \text{ cm}$$

OR

$$2w + 2(2w-5) = 26$$

$$2w + 4w - 10 = 26$$

$$6w - 10 = 26$$

now the same

as above