

ALG I - CH 1 REVIEW SOLNS

ALGEBRA 1 CHAPTER 1 REVIEW

Write an algebraic expression for each phrase. Use "x" for the number.

1. 8 less a number.

$$8 - x$$

2. 8 less than a number.

$$x - 8$$

3. Five more than three times a number.

$$5 + 3x$$

4. Twice the difference of a number and seven.

$$2(x - 7)$$

In 5 - 10, simplify each expression.

$$\begin{aligned} 5. \quad & -15 \div 5(3) - 1^2 \\ & = -3(3) - 1 \\ & = -9 - 1 \\ & = -10 \end{aligned}$$

$$\begin{aligned} 6. \quad & \frac{-4^2 - 6 + 2}{4 - (-1)} = \frac{-16 - 6 + 2}{5} \\ & = \frac{-22 + 2}{5} \\ & = \frac{-20}{5} \\ & = -4 \end{aligned}$$

$$\begin{aligned} 7. \quad & -18y^2 - 6y + 7y^2 + 10y \\ & = -11y^2 + 4y \end{aligned}$$

$$\begin{aligned} 8. \quad & -\frac{1}{7}(14x - 7) \\ & = -\frac{1}{7}(14x) - \frac{1}{7}(-7) \\ & = -2x + 1 \end{aligned}$$

$$\begin{aligned} 9. \quad & -5|-4 - 7| \\ & = -5|-11| \\ & = -5(11) \\ & = -55 \end{aligned}$$

$$10. \quad \pm\sqrt{\frac{16}{25}} = \pm\frac{4}{5}$$

In 11 and 12, evaluate each expression if $a = -2$, $b = 3$ and $c = -1$.

$$\begin{aligned} 11. \quad & 5a^2 - bc = 5(-2)^2 - (3)(-1) \\ & = 5(4) + 3 \\ & = 20 + 3 \\ & = 23 \end{aligned}$$

$$\begin{aligned} 12. \quad & \frac{ac + 6b}{a - b + c} = \frac{(-2)(-1) + 6(3)}{-2 - 3 + (-1)} \\ & = \frac{2 + 18}{-5 - 1} \\ & = \frac{20}{-6} \\ & = -\frac{10}{3} \end{aligned}$$

In 13 – 14, name the set or sets of numbers to which each number belongs. (N, W, Z, I, Q, R)

13. $-\sqrt{100} = -10$ W, Z, Q, R 14. 2π I, R

15. Order $-\frac{13}{4}$, $-\sqrt{16}$, $-3.\bar{6}$ from least to greatest.

$-4\frac{1}{4}$, -4 , -3.6

$-\frac{13}{4}$, $-\sqrt{16}$, -3.6

In 16 – 19, name the property represented in each algebraic statement.

16. $-8 \cdot 1 = -8$

Mult. Identity

17. $9 \cdot -1 = -9$

Mult. Prop of -1

18. $(x + 8) + 3 = x + (8 + 3)$

Associative

19. $(x + 8) + 3 = 3 + (x + 8)$

Commutative Prop

- changes order

Tell whether each equation is true, false or open.

20. $\frac{5n+3}{2} = -4$

open

21. $3(12) \div 6^2 = 1$

$36 \div 36 = 1$

$1 = 1$

True

In 22 and 23, simplify each expression.

22. $-3(5x - 4y + 2)$

$= -15x + 12y - 6$

23. $\frac{24m-16}{8}$

$= 3m - 2$

24. Explain/show how you would solve $3(198)$ mentally.

$3(200-2)$

$= 600 - 6$

$= 594$

25. Is the ordered pair $(4, -3)$ a solution to the equation $2x - 5 = -y$?

$2(4) - 5 = -(-3)$

$8 - 5 = 3$

$3 = 3$

Yes, $(4, -3)$ is a solution.