

Name _____

Algebra 1

Summer Homework 2018-19

Multiple Choice: Choose the correct answer and write the corresponding number in the blanks. You need to be able to do each of these problems without a calculator.

_____ 1. Write an algebra expression for: **2 less than 3 times a number**

- a. $3x - 2$ b. $2 - 3x$ c. $3(x - 2)$ d. $3(2 - x)$

_____ 2. Write an algebra expression for: **twice the sum of a number and 10**

- a. $2x + 10$ b. $2x - 10$ c. $2(x + 10)$ d. $\frac{2x}{10}$

_____ 3. A frog can jump twenty times the length of its body. If a frog's body length is ***b***, write an algebraic expression to describe the length the frog can jump.

- a. $\frac{b}{20}$ b. $b + 20$ c. $b - 20$ d. $20b$

_____ 4. Which variable expression is a translation of **5 times the difference of 8 and a number?**

- a. $5(8 - x)$ b. $x - 5 \cdot 8$ c. $5 \cdot 8 - x$ d. $5 - 8x$

_____ 5. Write the following as a verbal expression: **$6x^2 - 1$**

- a. 6 times twice a number minus 1 b. 1 subtracted from 6 times a number squared
c. 6 times a number squared less than 1 d. 6 times twice a number from 1

_____ 6. Write an algebra expression for: **the quantity of 2 less than a number squared**

- a. $x - 2^2$ b. $(2 - x)^2$ c. $(x - 2)^2$ d. $x^2 - 2$

_____ 7. Simplify: $12 + 6 \div 3 \cdot 2 - 2^3$

- a. 8 b. 5 c. 4 d. 6

In problems 8 – 10, $a = 2$, $b = -5$, $c = -3$, and $d = 1$

_____ 8. Evaluate: $a^2b + c$

- a. -4 b. -20 c. -23 d. -17

_____ 9. Evaluate: $(c + d)^3$

- a. 8 b. -6 c. 64 d. -8

_____ 10. Evaluate: $\frac{c(a+d)-7}{4+(b-3)}$

- a. 8 b. -4 c. 12 d. 4

_____ 11. Which of the following is the correct way to rewrite the expression: $8 - (-3) + (-2) - 5$

- a. $8 - 3 - 2 - 5$ b. $8 + 3 - 2 - 5$
c. $8 + 3 + 2 - 5$ d. $8 - 3 + 2 - 5$

_____ 12. Simplify: $5 - (-3) + (-4) + 9$

- a. 15 b. -5 c. 13 d. -3

_____ 13. Simplify: $(-2)(3)(-2)$

- a. -3 b. 12 c. 10 d. -12

_____ 14. Simplify: $(-2)(2)(-5)(-1)$

- a. -7 b. -24 c. 20 d. -20

_____ 15. Simplify: $-2(5) + (-1)(-3)$

- a. -13 b. -7 c. 33 d. -6

_____ 16. Simplify: $5x - 8 - 7x + 2$

a. $2x - 6$

b. $2x + 10$

c. $-2x - 6$

d. $-2x - 10$

_____ 17. Simplify the expression: $\frac{-56 - 24h}{-16}$

a. $\frac{-14 - 6h}{-4}$

b. $\frac{-7 - 3h}{-2}$

c. $\frac{7 + 3h}{8}$

d. $\frac{7 + 3h}{2}$

_____ 18. Simplify: $5 - \left(-\frac{1}{3}\right) + \frac{2}{3}$

a. 4

b. $\frac{14}{3}$

c. $\frac{16}{3}$

d. 6

Completion Problems: Answer each question, using labels when appropriate. Show your work.

19. Simplify: $3^2 + 16 \div 8 \cdot 5$

19. _____

20. Evaluate $xy + z$ if $x = -2$, $y = -3$, and $z = -4$

20. _____

21. Simplify: $-8 + (-3) - (-4) - 2$

21. _____

22. Error Analysis: Describe the error below and correctly evaluate the expression when $m = 8$.

$5m + 3 \Rightarrow 5 \cdot 8 + 3$

$\Rightarrow 5 \cdot 11$

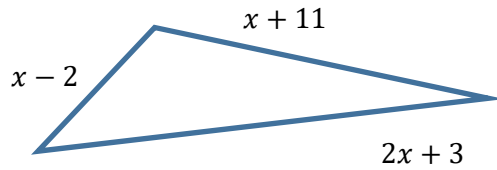
$\Rightarrow 55$

Describe error:

22. _____

23. Find the perimeter of the triangle below. Simplify answer.

23. _____



24. Simplify: $3(x + 2)$

24. _____

25. Simplify: $-5(2x - 3)$

25. _____

26. Simplify: $4(x - 6) - 7(3x + 2)$

26. _____

27. Members of the marching band are making their own color-guard flags. Each rectangular flag requires 0.6 square yards of material. The material costs \$2 per square yard. How much will it cost to make 25 flags?

27. _____

28. Your family and friends are going to an amusement park. Adults pay \$25 per ticket and children pay \$15 per ticket. Your group has 10 children and your total bill for tickets is \$375. How many adults are in your group?

28. _____