

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  $m = 8$ .

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

$\Rightarrow 5 \cdot 11$

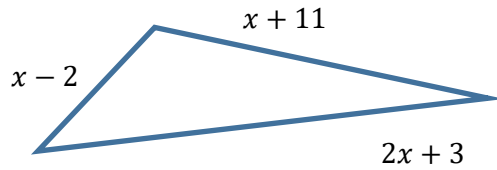
$\Rightarrow 55$

**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. \_\_\_\_\_