

Algebra Intro Packet

Name: \_\_\_\_\_

Date: \_\_\_\_\_

1. In a class of 24 students, 25% of them failed a test. How many students failed the test?
  
  
  
  
  
  
  
  
  
  
2. A basketball player made 9 out of 12 foul shots. What percent of his foul shots did he make?
  
  
  
  
  
  
  
  
  
  
3. A car is traveling at 60 miles per hour. How many miles per minute is the car traveling?  
  
A. 1      B.  $\frac{1}{60}$       C.  $\frac{1}{360}$       D. 3600
  
  
  
  
  
  
  
  
  
  
4. During a recent winter, the ratio of deer to foxes was 7 to 3 in one county of New York State. If there were 210 foxes in the county, what was the number of deer in the county?  
  
A. 90      B. 147      C. 280      D. 490
  
  
  
  
  
  
  
  
  
  
5. Which number is equal to  $3.6 \times 10^5$ ?  
  
A. 360,000      B. 3,600,000  
C. 0.000036      D. 0.0000036

6. The expression  $15 - 3[2 + 6(-3)]$  simplifies to  
  
A. -45      B. -33      C. 63      D. 192
  
  
  
  
  
  
  
  
  
  
7. Debbie solved the linear equation  $3(x + 4) - 2 = 16$  as follows:  
[Line 1]       $3(x + 4) - 2 = 16$   
  
[Line 2]       $3(x + 4) = 18$   
  
[Line 3]       $3x + 4 = 18$   
  
[Line 4]       $3x = 14$   
  
[Line 5]       $x = 4\frac{2}{3}$   
  
She made an error between lines  
  
A. 1 and 2      B. 2 and 3  
C. 3 and 4      D. 4 and 5
  
  
  
  
  
  
  
  
  
  
8. The sentence  $3 + (5 + 2) = (5 + 2) + 3$  illustrates  
  
A. the commutative property of addition  
B. the associative property of addition  
C. the distributive property of multiplication over addition  
D. the additive identity element

9. Which expression is an example of the associative property?

A.  $(x + y) + z = x + (y + z)$

B.  $x + y + z = z + y + x$

C.  $x(y + z) = xy + xz$

D.  $x \cdot 1 = x$

10. Maria is twice as old as Sue. If  $x$  represents Sue's age, which expression represents how old Maria will be in three years?

A.  $2x$

B.  $x + 3$

C.  $\frac{1}{2}x - 3$

D.  $2x + 3$

11. Using the letter  $n$  to represent a number, express "four less than twice this number" in terms of  $n$ .

12. Which expression represents "5 less than the product of 7 and  $x$ "?

A.  $7(x - 5)$

B.  $7x - 5$

C.  $7 + x - 5$

D.  $5 - 7x$

13. If  $x = 3$  and  $y = 2$ , evaluate  $x^2y$ .

14. The sum of  $3x^2 + 4x - 2$  and  $x^2 - 5x + 3$  is

A.  $4x^2 + x - 1$

B.  $4x^2 - x + 1$

C.  $4x^2 + x + 1$

D.  $4x^2 - x - 1$

15. Solve for  $x$ :  $5(2x - 4) = 10$

16. Solve for  $x$ :  $x + 18 - 2 = 2$

17. On June 17, the temperature in New York City ranged from  $90^\circ$  to  $99^\circ$ , while the temperature in Niagara Falls ranged from  $60^\circ$  to  $69^\circ$ . The difference in the temperatures in these two cities must be between

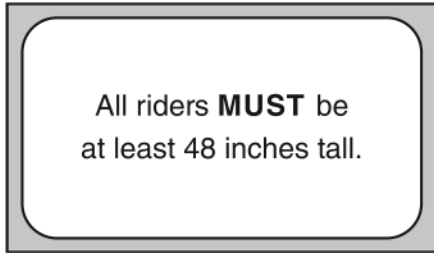
A.  $20^\circ$  and  $30^\circ$

B.  $20^\circ$  and  $40^\circ$

C.  $25^\circ$  and  $35^\circ$

D.  $30^\circ$  and  $40^\circ$

18. The sign shown below is posted in front of a roller coaster ride at the Wadsworth County Fairgrounds.



If  $h$  represents the height of a rider in inches, what is a correct translation of the statement on this sign?

- A.  $h < 48$                       B.  $h > 48$   
C.  $h \leq 48$                       D.  $h \geq 48$

19. There are 461 students and 20 teachers taking buses on a trip to a museum. Each bus can seat a maximum of 52. What is the *least* number of buses needed for the trip?

- A. 8            B. 9            C. 10            D. 11

20. Twice the sum of a number and 4 is equal to 22. What is the number?

21. If the sum of a number and four is multiplied by two, the result is 28. What is the number?