Name: _____ **7.EE.1a**

1. If x and y are integers, then $3(x + y) = 3x + 3y$ is an example of which property?

A distributive property
B identity property of addition
C associative property of addition
D commutative property of addition

2. If x, y, and z are integers then $2x + (3y + 8z) = (2x + 3y) + 8z$ is an example of which property?

A distributive property
B identity property of addition
C associative property of addition
D commutative property of addition

3. Which equation illustrates the commutative property of addition?

A $a + b = a + b$
B $m + 2n = 2n + m$
C $3(x – 1) = 3x – 3$
D $x(3 – y) = x(y – 3)$

4. Which equation illustrates the identity property of addition?

A $\frac{x}{2} \cdot \frac{3}{3} + 3 = \frac{x}{2} + 3$
B $2x + 3 – 3 = 2x + 0$
C $2x \cdot 3 + \frac{1}{3} \cdot 3 = 2x \cdot 3 + 1$
D $2x + 3 + 0 = 2x + 3$

5. Which of the following is NOT an example of the commutative property of addition?

A $x + (–13) = –13 + x$
B $2 + x + 5 = 2 + 5 + x$
C $x – 13 = 13 – x$
D $–x + 5 = 5 + (–x)$

6. Which expression is equivalent to $m + (p + 6)$ by the associative property?

A $(m + p) + 6$
B $m + (6 + p)$
C $(p + 6) + m$
D $p + 6 + m$

7. By what property are $x + 3(7 – x)$ and $x + 21 – 3x$ equivalent?

A identity property
B distributive property
C associative property
D commutative property

8. For values of x when $x \neq 0$, which number property is shown below?

$$17x\left(\frac{x}{x}\right) = 17x$$

A associative

B commutative

C division property of zero

D multiplicative identity

9. Which is equivalent to $8s + 20t$ by the distributive property?

A $4s(2 + 5t)$

B $8(s + 20t)$

C $8s(1 + 3t)$

D $4(2s + 5t)$

10. Which of the following statements illustrates the identity property of addition?

A $m + 0 = m$

B $x + y = y + x$

C $g(h + j) = gh + gj$

D $(p + q) + r = p + (q + r)$

11. The equation $4(2x + 3y) = 4(3y + 2x)$ is an example of which property?

A distributive property

B associative property of addition

C commutative property of addition

D identity property for addition

12. What is the name of the property illustrated in the equation below?

$$5 + (3x + 0) = 5 + 3x$$

A inverse

B identity

C associative

D distributive

13. Which property is used to simplify the expression $5(3x + 18)$ to $15x + 90$?

A identity property

B associative property

C distributive property

D commutative property

14. Which equation illustrates the commutative property of addition?

A $(4x + 3) + 5 = 4x + (3 + 5)$

B $4x + 0 + 3 = 4x + 3$

C $4(x + 3) = 4x + 12$

D $4x + 3 = 3 + 4x$

15. What is the name of the property illustrated below?

$$3(x + 4) = (x + 4)3$$

A commutative property of multiplication

B associative property of addition

C commutative property of addition

D associative property of multiplication

16. Rob simplified an expression using the following steps.

Step 1: $2x - 3 + 5x + 7$
Step 2: $2x + 5x + 7 - 3$
Step 3: $7x + 4$

Which property justifies Step 2?

A identity property

B associative property

C distributive property

D commutative property

17. What property of addition is illustrated in the equation below?

$$(3x + 2) + 16 = 3x + (2 + 16)$$

A identity

B associative

C distributive

D commutative

18. The expressions $5 + 2(x - 7)$ and $5 + 2x - 14$ are equivalent by the

A distributive property.

B identity property.

C associative property of multiplication.

D commutative property of multiplication.