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

7.EE.1

* If there is a (**+**) in front of the parentheses, **NOTHING CHANGES**
* If there is a (**-**) in front of the parentheses, **EVERYTHING INSIDE PARENTHESES BECOMES OPPOSITE**
* **When distributing**, multiply **EVERYTHING IN THE PARENTHESES**, by the number (including the sign) in front of the parentheses

**Distributive Property Example**: -5 ( 2x – 7) = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Commutative Property** - when the **order of the terms changes**

**Factorization** – pull out the Greatest Common Factor, which can be: a number, a letter, or both

***Example:*** 14ac + 12c – 22cd = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_1. Which expression represents the sum of (2*x* − 5*y*) and (*x* + *y*)? (2013)

A. 3*x* − 4*y* B. 3*x* − 6*y C. x* − 4*y D. x* − 6*y*

\_\_\_\_\_2. Which expression is equivalent to (7*x* − 5) − (3*x* − 2)? (2014)

A. 10*x* − 7B. 10*x* − 3 *C.* 4x − 7 *D.* 4x − 3

\_\_\_\_\_3. The expression below was simplified using two properties of operations. (2014)

5(11*z* + 29 + 6*z*)

Step 1 5(11*z* + 6*z* + 29)

Step 2 5(17*z* + 29)

Step 3 85*z* + 145

Which properties were applied in Steps 1 and 3, respectively?

A. commutative property, then distributive property

B. commutative property, then identity property

C. associative property, then distributive property

D. associative property, then commutative property

\_\_\_\_\_4. Which expression is equivalent to 4.8 + 2.2*w* − 1.4*w* + 2.4 ? (2014)

A.0.4(6 + 2*w*) B. 0.8(9 + *w*) C. 1.6(3 + 2*w*) D. 3.6(2 + *w*)

\_\_\_\_\_5. The three steps shown below were used to find an expression equivalent to (2015)

(15*x* − 30*y*) + 10*x*

**Step 1:**  **?**

**Step 2:** 16x – 12y

**Step 3:** 4(4x – 3y)

A. (25*x* − 30*y*) B. 6*x* − 12*y* + 10*x* C. 6*x* − 30*y* + 10*x* D. 15(*x* − 2*y*) + 10*x*

\_\_\_\_\_6. Which expression represents a factorization of 32m + 56mp ? (2015)

A. 8(4m + 7p) B. 8(4 + 7)mp C. 8p(4 + 7m) D. 8m(4 + 7p)

\_\_\_\_\_7. Which expression is equivalent to 8*c* + 6 − 3*c* – 2 ? (2015)

A. 5*c* + 4 B. 5*c* + 8 C. 11*c* + 4 D. 11*c* + 8

\_\_\_\_\_8. Which expression represents the product of 3 and ? (2016)

A. 5.55n B. 9.15n C. 3.75n +1.8 D. 3.75n +5.4

\_\_\_\_\_9. Which expression is equivalent to the expression -3(4x – 2) – 2x ? (2016)

A. -8x B. -16x C. -14x – 2 D. -14x + 6

\_\_\_\_\_10. Which expression makes the equation true for all values of *x* ? (2017) no calculator

16*x* - 16 = 4( ? )

A. 4*x* – 4 B. 4*x* – 16 C. 2*x* – 2 D. 12*x* - 12

\_\_\_\_\_11. Which expression is equivalent to the expression shown below? (2017) no calculator

1. B. C. D.

\_\_\_\_\_12. Which expression is equivalent to the expression shown below? (2017)

1. - B. C. D.

\_\_\_\_\_13. A triangle has side lengths of (5.5*x* + 6.2*y*) centimeters, (4.3*x* + 8.3*z*) centimeters, and

(1.6*z* – 5.1*y*) centimeters. Which expression represents the perimeter, in centimeters,

of the triangle? (2017)

A. 11.4*xz* + 9.4*yz* C. 9.8*x* + 1.1*y* + 9.9*z*

B. 11.7*xy* + 12.6*xz* - 3.5*yz* D. 9.8*x* + 7.8*y* + 3.5*z*

\_\_\_\_\_14. Which expression is equivalent to ( -18) – 64n ? (2018)

1. -2(9 – 32n) B. 2(9 – 32n) C. -2(9 + 32n) D. 2(9 + 32n)

\_\_\_\_\_15. Which expression is equivalent to n + n – 0.18n ? (2018)

1. 1.18n B. 1.82n C. n – 0.18 D. 2n – 0.82

\_\_\_\_\_16. Which expression is equivalent to (6x +15) – 3 ? (2018)

1. -2x + 12 B. -2x + 2 C. -2x – 2 D. -2x – 8

\_\_\_\_\_17. Which expression is equivalent to 7a – 8 – 12a + 4 ? (2019)

1. -9a B. 31a C. -5a – 4 D. 19a + 12

\_\_\_\_\_18. Which expression is equivalent to 2(x + 7) – 18x + ? (2019)

1. C.
2. D.