MCC7.EE.1 Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
MCC7.EE.2 Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related.
MCC7.EE.3 Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies.
MCC7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.

1. **Titus bought 1.2 pounds of pears for $1.50 per pound. He also bought 2 pounds of candy for $2.75 per pound. Titus gave the cashier $20 for the pears and candy. How much change did he receive?**

   A. $15.75 B. $13.60 C. $12.70 D. $7.30

2. **Which equation is true?**

   A. $1\frac{2}{7} \div 4\frac{4}{9} = 1\frac{2}{7} \times 4\frac{9}{4}$ B. $0.68 - \frac{5}{11} = \frac{5}{11} - 0.68$

   C. $\frac{1}{9}\left(\frac{5}{12} + \frac{3}{5}\right) = \left(\frac{1}{9} \times \frac{5}{12}\right) + \left(\frac{1}{9} \times \frac{3}{5}\right)$ D. $14 - \left(0.5 - \frac{1}{15}\right) = \left(14 - 0.5\right) - \frac{1}{15}$

3. **On Monday, Frankie had $180.25 in his bank account. On Tuesday, he withdrew $54.50 from his account. After depositing $288.75 on Wednesday, how much money did Frankie have in his account?**

   A. $54.00 B. $163.00 C. $414.50 D. $523.50

4. **Simplify** $\frac{3}{4}\left(\frac{2}{3} + \frac{4}{3}\right) - 9 \div \frac{1}{2} \times \frac{1}{3}$.

   A. $-52\frac{1}{2}$ B. $-5\frac{1}{4}$ C. $-4\frac{7}{9}$ D. $-4\frac{1}{2}$

5. What is the length of a rectangular rose garden with a width of 25 feet and a perimeter of 130 feet?

   A. 40 feet B. 65 feet C. 80 feet D. 105 feet

6. **If $6x = -54$, what is the value of x?**

   A. –9 B. –7 C. 7 D. 9

7. **Which values of x make the inequality $1 + 5x < -9$ true?**

   A. $x < -2$ B. $x < -15$ C. $x > -2$ D. $x > -15$

8. **If $7 - 2x \geq 15$, what is the solution for *x*?**

   A. $x \geq 10$ B. $x \geq -4$ C. $x \leq 10$ D. $x \leq -4$

9. **Jordan simplified the expression (6*x* + 9*y*) + 7*y* using the property of numbers as shown below.**

   Step 1: 6*x* + (9*y* + 7*y*)
   Step 2: 6*x* + 16*y*
   Step 3: 16*y* + 6*x*
   Step 4: 2(8*y* + 3*x*)

   Which of the following is true about the properties of numbers Jordan used to simplify this expression?

   A. He used the Associative Property of Addition, then the Commutative Property of Addition, followed by the Distributive Property of Multiplication Over Addition.

   B. He used the Commutative Property of Addition, then the Associative Property of Addition, followed by the Distributive Property of Multiplication Over Addition.

   C. He used the Identity Property of Addition followed by the Associative Property of Multiplication.

   D. He used the Associative Property of Addition followed by the Distributive Property of Multiplication Over Addition.

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

    A. distributive property C. associative property of addition

    B. identity property of addition D. commutative property of addition

11. **What property of addition is illustrated in the equation below?**
    $(3x + 2) + 16 = 3x + (2 + 16)$

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

12. **Tara used the expression, where *e* represents her earnings, to calculate the monthly balance in the savings account for each of her 3 children.**

    $$\frac{0.3(e + 60) + 1,500}{3}$$

    Which expression is equivalent to Tara's expression?

    A. $0.1e + 500$ B. $0.1e + 506$

    C $0.1(e + 20) + 500$ D. $0.1e + 20 + 500$

13. Which is equivalent to this expression?

$6a + 3b$

A. $9ab$ B. $3(2a + 3b)$

C $6(a + b) - 3b$ D. $7a - a + 2b - b$

14. Which is equivalent to the expression below?

$$\left(9x^5 - 19x^2 - 18\right) + \left(-8x^5 + 15x^2 - 3\right)$$

A. $17x^5 - 4x^2 + 15$ B. $-17x^5 + 4x^2 - 15$

C $x^5 - 4x^2 - 21$ D. $-x^5 + 4x^2 + 21$

15. Kevin used the steps below to solve the linear inequality ($^{-}12x - 4) < 4(2x + 3) - 20.

Step 1: $^{-}12x - 4 < 8x + 12 - 20$
Step 2: $^{-}12x - 4 < 8x - 8$
Step 3: $^{-}12x + 8x < {}^{-}8 - 4$
Step 4: $^{-}4x < {}^{-}12$
Step 5: $x > 3$

Which of the following statements *best* explains why Kevin's solution is incorrect?

A. Step 1 is incorrect because 4 should not be multiplied by 3 when applying the distributive property.

B. Step 2 is incorrect because the sign of 8 should be positive as it is the difference between 20 and 12.

C. Step 3 is incorrect because the signs of 4 and 8*x* should change when shifting them from one side to the other.

D. Step 5 is incorrect because the inequality should not be reversed when dividing by $^{-}4$.

16. **Carol has a box containing 35 apples. She will keep 6 apples for herself and pack the remaining apples, equally, in paper bags for her friends. Each paper bag holds 4 apples. Carol solved the inequality below to find *f*, the possible number of friends to whom she could give a bag of apples.**

Step 1: $4f + 6 \leq 35$
Step 2: $4f \leq 35 - 6$
Step 3: $4f \geq 29$
Step 4: $4f \geq \frac{29}{4}$

Step 5: $f \geq 7$

Which statement *best* supports the fact that Carol's solution is incorrect?

A. Step 1 should be $4f + 6 < 35$.

B. Step 5 should be $f \geq 8$.

C. Step 3 should be $4f \leq 29$.

D. Step 1 should be $6f + 4 \leq 35$.