FCMS Copy
7th Grade Pre-Algebra

NTI Pre-Algebra

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Name _____

Day 1

1. What number do you need to add to +6 to get 0?

2. A train first travels east for 20 kilometers. Then it turns north and travels for 43 kilometers. Next it goes west for 20 kilometers. Finally, it travels south for an unknown number of kilometers. At the end of the journey, the train is back at the original location. How far did it travel southward?

3. At 11 P.M., it was 48°F. The temperature was 6° cooler by 7 A.M. By 11 A.M. the temperature was 48°F again. What integer represents the number of degrees the temperature changed from 7 A.M. to 11 A.M.?

4. An object is at rest if all forces acting on the object have a net force of zero. If an object has a force of −5.5 Newtons applied to it, what force needs to be applied in order for the object to be at rest?

Ⓐ 5.5 Newtons

Ⓑ 5 Newtons

Ⓒ −5 Newtons

Ⓓ −5.5 Newtons

5. What number do you need to add to −11 to get 0?

6. June starts hiking at sea level. She climbs 500 ft and then descends 175 ft. Which integer represents the change in elevation June still needs to complete in order to reach sea level again?
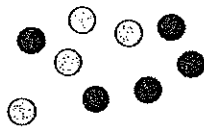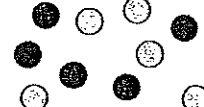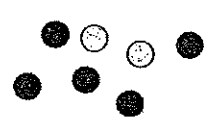
Ⓐ 175

Ⓑ −500

Ⓒ −175

Ⓓ −325

7. A helium atom has no charge if it has 2 protons (+) and 2 electrons (−). Which expression best represents this helium atom with no charge?

Ⓐ $2 + 2 = 0$

Ⓑ $2 + (-2) = 0$

Ⓒ $2 = -2$

Ⓓ $2 + -2 = 0$

---

8. Which set of tokens represents 0?

● Positive
◌ Negative

Ⓐ   Ⓒ

Ⓑ   Ⓓ

---

9. Tammy only has $550 of debt left. If Tammy were to pay off her debt completely today, how could you represent Tammy's situation as an equation?

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10. A neon atom has no charge if it has 10 protons (+) and 10 electrons (−). How would you represent a neon atom with no charge using a mathematical equation?

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11. A train travels 25 kilometers east to get to Mathy station. It then travels 42 kilometers north to get to Aiur station. How many kilometers south does the train need to travel to get back to Mathy station?

Ⓐ   −42 kilometers

Ⓑ   42 kilometers

Ⓒ   25 kilometers

Ⓓ   −25 kilometers

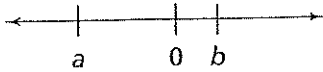**12.** If $a + b = 0$, then what is true about a and b?

Ⓐ $a = -b$

Ⓑ $|a| > |b|$

Ⓒ $a = -|b|$

Ⓓ $|b| > |a|$

---

13. What number do you need to add to −33.4 to get 0?

Name _____

Day 2

1. A number line shows values *a* and *b*. How long is the line between *a* and *b*?

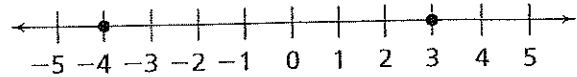**5.** What is the distance between the two points on this number line?

2. When she woke in the morning, Josie noticed the temperature outside was −4.8°C. When she got home from school the temperature rose to 15.6°C. What was the change in temperature?

6. Which expression represents the distance between the two points on the number line?

Ⓐ $-2.5 + 6.5$

Ⓑ $6.5 + (-2.5)$

Ⓒ $|-2.5 + 6.5|$

Ⓓ $|-2.5| + 6.5$

3. What number makes this equation true? Explain.

$\boxed{} + (-17.2) = 0$

7. Select all the points that are more than 3 units away from 0 on a number line.

☐ 3

☐ 4

☐ −7

☐ −3

☐ −5

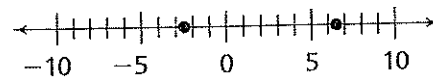**4.** If a dune buggy drives from an elevation of 10 meters below sea level to an elevation of 5 meters above sea level, what is the vertical distance that the dune buggy traveled?

8. Jake uses a number line to find the value of the expression $-5 + 7 + (-2)$.

Part A

Draw the last step on the number line.
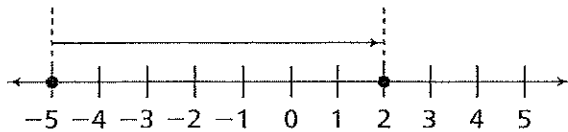
Part B

What is the value of the expression $-5 + 7 + (-2)$?

Ⓐ 0

Ⓒ 2

Ⓑ 4

Ⓓ 7

---

9. The points -7 and $+2$ are plotted on a number line. What is the distance between them?

Ⓐ 8

Ⓒ -5

Ⓑ 5

Ⓓ 9

---

10. Which number, when added to 12.9, has a sum of 0?

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11. Which point on the number line is 6 units away from the point indicated?

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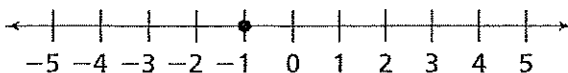
12. What is the distance between the two points on this number line?

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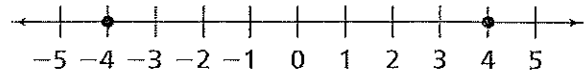
13. Todd is doing math homework and notices that two numbers he is working with add up to zero. What is true of the two numbers that Todd is working with?

Ⓐ Both numbers are negative

Ⓑ Both numbers are positive

Ⓒ The numbers are opposite of each other

Ⓓ One of the numbers is zero

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14. The points -9.8 and $+5.2$ are plotted on a number line. What is the distance between them?

Ⓐ -4.6

Ⓒ -15

Ⓑ 4.6

Ⓓ 15

Name _____

Day 3

1. What is the value of the expression
$-3.8 + 7.5 - 10 + 2.3$?

2. Jason and Julio live on the same street as their school. Based on the diagram, how far apart do Jason and Julio live?

Julio .... School .... Jason

$-5 \; -4 \; -3 \; -2 \; -1 \; \; 0 \; \; 1 \; \; 2 \; \; 3 \; \; 4 \; \; 5$

Ⓐ -8 mi

Ⓑ 4 mi

Ⓒ -4 mi
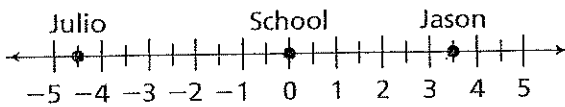
Ⓓ 8 mi

3. What is the value of the expression
$3 + (-5.5) + (-8) + \frac{1}{4}$?

4. A number line shows values a and b. Which statement about a and b is true?

$a \qquad \qquad 0 \quad b$

Ⓐ $|a| > |b|$

Ⓑ $a + b = 0$

Ⓒ $|b| > |a|$
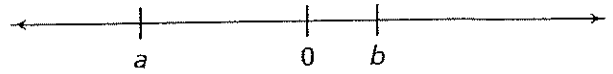
Ⓓ $a - b = 0$

5. Mia and Samara live on the same street as the new cafe. The diagram below shows the locations of their homes relative to the cafe, in kilometers. How far will Mia have to ride her bike if she picks up lunch at the cafe and brings it to Samara's house?

Samara ...... Cafe .... Mia

$-5 \; -4 \; -3 \; -2 \; -1 \; \; 0 \; \; 1 \; \; 2 \; \; 3 \; \; 4 \; \; 5$

6. If $a - b = 7$, what is also true?

Ⓐ $a + b = -7$

Ⓑ $a + (-b) = 7$

Ⓒ $-a - b = 7$

Ⓓ $b - a = 7$

7. What equation best describes finding the distance between −5 and 16?

Ⓐ −5 + 16

Ⓑ 5 − 16

Ⓒ −5 − 16

Ⓓ $|-5 - 16|$

8. A dolphin is traveling 5.5 meters under the water, then jumps up out of the water at a height of 2.4 meters. Write an expression to represent the vertical distance the dolphin traveled. What is the vertical distance?

9. What is the value of the expression $3\frac{1}{2} + 1\frac{3}{4}$?

10. What is the value of the expression $-3\frac{2}{5} - 1\frac{1}{6}$?

11. What is the value of the expression $-13 - (-5) + (-3) + 4 - 7$?

12. Rewrite the expression using the additive inverse.

$2 - 8 - 3 + 2 - 4$

13. Find the difference.

$3.3 - 6.7$

Ⓐ 10

Ⓑ −10

Ⓒ 3.4

Ⓓ −3.4

14. The temperature in Grand Forks, North Dakota was 53° F in the afternoon. After the sun went down the temperature dropped to −1.5° F. What was the change in temperature?

Ⓐ 54.5°

Ⓑ −54.5°

Ⓒ −51.5°

Ⓓ 51.5°

Name _____

Day 4

1. Salim had to withdraw $28.50 from his bank account every week for 5 weeks to pay for a purchase. What number represents the change in his bank account?

2. Which expressions have products that are positive? Select all that apply.

☐ $(5)\left(\frac{-1}{3}\right)(0.3)\left(\frac{4}{5}\right)$

☐ $\left(\frac{-3}{8}\right)\left(\frac{2}{3}\right)\left(\frac{-1}{2}\right)\left(\frac{5}{9}\right)$

☐ $(-2.8)(-4)(-1.6)(-9.2)(7)$

☐ $\left(\frac{1}{2}\right)\left(\frac{-6}{7}\right)\left(\frac{-1}{3}\right)$

☐ $(5)(-2.1)(3.3)(1)$

3. What is the value of the expression $-3.5 \cdot \frac{4}{5}$?

4. Which expression is equivalent to $-2 \cdot \frac{3}{8}$? Select all that apply.

☐ $2 \cdot \frac{3}{8}$

☐ $2 \cdot \frac{-3}{8}$

☐ $2 \cdot \frac{3}{-8}$

☐ $-2 \cdot \frac{-3}{8}$

☐ $-2 \cdot \frac{-3}{-8}$

5. A hot air balloon is descending vertically at a rate of $18\frac{1}{4}$ feet per minute. If it continues at this rate, what number represents the vertical change of the balloon after 3 minutes?

6. An equation is shown where $x < 0$, $z > 0$, and $|x| > |z|$.

$x \cdot y = z$

Which statements are true?

☐ $y > 0$

☐ $y < 0$

☐ $|y| < 1$

☐ $|y| > 1$

☐ $|y| > |z|$

7. Which expressions have a product that is negative? Select all that apply.

☐ $\left(\frac{-3}{4}\right)(-2)\left(\frac{-5}{7}\right)\left(\frac{2}{3}\right)$

☐ $(-1.7)(-3.1)(4.8)(6.2)$

☐ $(5)\left(\frac{-4}{9}\right)(2)\left(\frac{-1}{3}\right)$

☐ $(-1)(7.8)(1.1)(-5.2)(3)$

☐ $(-4)(2)\left(\frac{-2}{3}\right)\left(\frac{-1}{5}\right)$

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8. Trinh descends down a mountain 1.2 miles in 30 minutes. If she continues at this rate, which equation represents how far she has descended from the top of the mountain after 2 hours?

Ⓐ $4(-1.2) = -4.8$

Ⓑ $4(-1.2) = -0.48$

Ⓒ $4(1.2) = 4.8$

Ⓓ $-4(-1.2) = 4.8$

9. In which situation could be the product of $-1.2 \cdot 4$ be used to answer the question?

Ⓐ Liam descended 1.2 miles in 4 minutes. What was his descent per minute?

Ⓑ Dayna earns $1.20 in interest per month. How much interest will she earn in 4 months?

Ⓒ The temperature dropped 1.2°F per hour for the past two hours. If the temperature continues to drop at this rate, how much will it drop after 4 hours?

Ⓓ Olivia ran 1.2 miles in 15 minutes. At this rate, how far will she run in 1 hour?

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10. Gino evaluates the expression $3 \times -2 \times \frac{3}{-7} \times -1$. Select all the equivalent expressions.

☐ $-\frac{18}{7}$

☐ $\frac{18}{7}$

☐ $-2\frac{4}{7}$

☐ $\frac{18}{-7}$

☐ $2\frac{4}{7}$

Name _____

Day 5

1. Select all the expressions that are equivalent to $-15 \div 23$.

☐ $\frac{15}{-23}$

☐ $-\frac{15}{23}$

☐ $\frac{-23}{15}$

☐ $\frac{15}{23}$

☐ $\frac{23}{-15}$

2. Frank is playing a game where he loses 1.5 points every time a critter eats a carrot. After two rounds of the game, he lost 13.5 points. Which equation represents the number of carrots the critter ate?

Ⓐ $-13.5 \cdot -1.5 = 20.25$

Ⓑ $13.5 \div -1.5 = 9$

Ⓒ $-13.5 \div 1.5 = -9$

Ⓓ $-13.5 \div -1.5 = 9$

3. The temperature decreased 20.8°F over 6.5 hours, What value represents the average temperature change per hour?

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4. Which expression is undefined?

Ⓐ $5 \div -5$

Ⓑ $1 \div -5$

Ⓒ $0 \div 5$

Ⓓ $-5 \div 0$

5. In which situation could the quotient of $-24.5 \div 7$ be used to answer the question?

Ⓐ Mr. Oster earns $24.50 per hour at his job. How much will he earn after working 7 hours?

Ⓑ A hot air balloon slowly descended 24.5 meters in 7 minutes. What was the balloons average rate of descent per minute?

Ⓒ Monica walked 24.5 miles in all over 7 days. How far did she walk each day?

Ⓓ Cora bought each of 7 friends a present that costs $24.50. How much did she spend on the presents?

6. Which fraction is equivalent to $\frac{8}{-13}$?

Ⓐ $\frac{13}{8}$ Ⓒ $\frac{-8}{-13}$

Ⓑ $\frac{-13}{8}$ Ⓓ $-\frac{8}{13}$

7. A submarine started at the surface of the ocean and descended 1,740 feet in 30 minutes. What integer represents the change in depth in feet per minute?

8. Select all the expressions that are equivalent to $9 \div -14$.

☐ $-\frac{9}{14}$

☐ $\frac{-9}{14}$

☐ $\frac{-9}{-14}$

☐ $\frac{14}{9}$

☐ $\frac{9}{-14}$

9. An equation is shown where $x < 0$ and $z < 0$.

$x \div y = z$

Which statements are true?

☐ $y < 0$

☐ $y > 0$

☐ $y = 0$

☐ y cannot equal 0

☐ $|z| > 1$

10. An ice cube tray full of water that is 40.5°C is placed in the freezer. The water cools to 0°C in 90 minutes. Which equation represents the change in temperature per minute?

Ⓐ $40.5 \div 90 = 0.45$

Ⓑ $-40.5 \div 90 = -0.45$

Ⓒ $90 \div -40.5 = -2.22$

Ⓓ $90 \div 40.5 = 2.22$

11. Select all the expressions that are equivalent to $\frac{5}{-27}$.

☐ $\frac{27}{5}$ ☐ $\frac{-5}{-27}$

☐ $-\frac{5}{27}$ ☐ $\frac{1}{25}$

☐ $\frac{-5}{27}$

12. In which situation could the quotient of $-28 \div -2.5$ be used to answer the question?

Ⓐ Tanya has $28 in a savings account. If she earns 2.5% interest, how much will she earn in 1 year?

Ⓑ Miguel has 28 miles to ride to his next stop. If he rides 2.5 miles in 30 minutes, how long will it take him to ride to his next stop?

Ⓒ If a balloon ascends at a rate of 2.5 feet per second, how long will it take it to reach 28 feet above ground?

Ⓓ A liquid that is 28°C is placed in a freezer and cools at a rate of 2.5°C per second. How long will it take the beverage to reach 0°C?

Name _____

Day 6

1. What is the value of the expression $-5 \times \frac{2}{7}$?

2. Use properties of operations to find the value of the expression $5\left(-1\frac{1}{3} \cdot 1\frac{4}{5}\right)$.

   (A) 12

   (B) -12

   (C) $5\frac{4}{15}$

   (D) $-5\frac{4}{15}$

3. Ali deposits her $412.60 paycheck and withdraws $40 cash from her bank account each week. If her starting balance was $315.85, what is her balance after 3 weeks?

4. Which of the following expressions can be evaluated using the distributive property? Select all that apply.

   ☐ $2\frac{1}{2} + 3\frac{1}{3}$

   ☐ $2 \cdot \left(1\frac{2}{7} + 3\frac{1}{5}\right)$

   ☐ $\left(\frac{3}{4} + 9\frac{3}{8}\right) \cdot \frac{1}{5}$

   ☐ $5\frac{1}{3} + 8\frac{1}{6} + 9$

   ☐ $-3\frac{1}{4} \cdot 4\frac{1}{5}$

5. Which property of operations is represented by the following statement.
   $-5 \cdot \left(\frac{1}{5} \cdot \frac{3}{8}\right)$ is equivalent to $-5 \cdot \left(\frac{3}{8} \cdot \frac{1}{5}\right)$.

   (A) Associative Property

   (B) Distributive Property

   (C) Commutative Property

   (D) Multiplicative Identity Property

6. What is the value of the expression
$-5.85 \times 3 \div 2$?

- [ ] 17.55
- [ ] 11.7
- [ ] -8.775
- [ ] -2.925
- [ ] -3.9

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7. Select all the expressions that are
equivalent to $-3 \cdot 24 \div 4$.

- [ ] $-3 \div 4 \cdot 24$
- [ ] $-4 \div 3 \cdot 24$
- [ ] $24 \cdot 3 \div -4$
- [ ] $24 \div -3 \cdot 4$
- [ ] $-3 \cdot -24 \div -4$

8. Gregory pays his phone bill each
month. If the total amount he paid for
3 months is \$149.97, which expression
represents the change in his account
balance each month, in dollars?

- Ⓐ 149.97
- Ⓑ -149.97
- Ⓒ 49.99
- Ⓓ -49.99

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9. Evaluate the expression. $-3\frac{1}{3} \div -2\frac{1}{5}$

$$\boxed{}$$

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10. What is the value of the expression
$\frac{15}{2} \times -\frac{1}{6}$?

$$\boxed{}$$

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11. In a card game if you play a king or a
queen you earn 15 points, but if you
have to play an ace you lose 25 points.
If a player plays 2 kings, 3 queens and
2 aces, which expressions can be used
to calculate the player's score? Select all
that apply.

- [ ] $15 \cdot (2 + 3) - 2 \cdot 25$
- [ ] $2 \cdot (15 + 3) - 50$
- [ ] $2 \cdot (-25) + 15 \cdot 5$
- [ ] $2 \cdot (15 - 25) + 15$
- [ ] $2 \cdot (-25 + 15) + 15 \cdot 3$

Name _____

Day 7

1. Five out of 12 apple trees in a small orchard are taller than 9 feet. What is the decimal equivalent of the number of apple trees taller than 9 feet?

Ⓐ 0.43

Ⓑ $0.41\overline{6}$

Ⓒ 0.57

Ⓓ 0.51

2. You are helping a friend pack to move. Their microwave measures $15\frac{5}{8}$ inches along its longest edge. You have a few boxes to choose from. Which box should you put the microwave in?

Ⓐ A box that measures 15.6 inches on all edges.

Ⓑ A box that measures 15.8 inches on all edges.

Ⓒ A box that measures 15 inches on all edges.

Ⓓ A box that measures 15.5 inches on all edges.

3. What is the decimal equivalent to $4\frac{8}{9}$?

[ ]

4. What is the decimal equivalent to $2\frac{11}{20}$?

Ⓐ 2.11

Ⓑ 2.20

Ⓒ 2.55

Ⓓ 2.63

5. Select all the fractions that are equivalent to 5.25.

☐ $5\frac{1}{5}$

☐ $5\frac{1}{4}$

☐ $\frac{5}{4}$

☐ $-5\frac{-1}{4}$

☐ $\frac{21}{4}$

6. Jay has a rope that is $31\frac{2}{3}$ ft long. He needs 3 pieces that are 10.42 ft long each to make a tire swing. Does he have enough rope?

[ ]

7. Select the decimal that is equivalent to $-3\frac{2}{5}$.

Ⓐ −3.4

Ⓑ −3.2

Ⓒ −3.25

Ⓓ −3.45

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8. You want to buy a frame for a poster you just got from a concert. The poster measures $10\frac{5}{6}$ inches long and $8\frac{1}{2}$ inches wide. Which frame should you buy?

Ⓐ a 10.5 by 8.5 inch frame

Ⓑ a 10.6 by 8.5 inch frame

Ⓒ a 11 by 8.8 inch frame

Ⓓ a 10 by 8 inch frame

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9. What is the fraction equivalent of 6.24? Write your answer as a simplified improper fraction.

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10. Select all statements that are true.

☐ A decimal that repeats can be written as a fraction.

☐ A decimal that terminates in 0 is not rational.

☐ 3.753841 is a rational number.

☐ $\frac{2}{3}$ is a rational number.

☐ A decimal that does not repeat or terminate is rational.

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11. Kai eats 22 of 24 grapes. What is the decimal equivalent of the number of grapes she ate?

Ⓐ 0.22

Ⓑ $1.\overline{09}$

Ⓒ $0.91\overline{6}$

Ⓓ 0.97

---

12. Which is the decimal equivalent of $2\frac{3}{4}$?

Ⓐ 2.5

Ⓑ 2.75

Ⓒ 2.25

Ⓓ 2.4

---

13. Which is the fraction equivalent of −3.8?

Ⓐ $-3\frac{2}{4}$

Ⓑ $-3\frac{1}{8}$

Ⓒ $-3\frac{4}{5}$

Ⓓ $-3\frac{80}{1}$

Name _____

Day 8

1. Karen is waiting for a pot of soup to cool off before serving it. After $4\frac{3}{4}$ min the soup has cooled from 100°C to 78°C. What was the average change in temperature each minute?

2. A scuba diver is swimming 18 feet below the water's surface. The diver swims up slowly at 0.6 feet per second for 5 seconds and then swims up for 2 more seconds at 0.3 feet per second. What is the diver's new depth?

3. Jon plays a board game with his family. He keeps track of how many tokens he has won and lost during the game.

Round	Change in Tokens
1	−2
2	+5
3	−3
4	+7

If Jon started the game with 5 tokens, how many tokens does he have left for Round 5?

4. Sandra is trying to find the best deal on a new toaster oven. She checks the price each week and tracks how much it changes.

Week	Change in Price ($)
1	+10.50
2	−13.00
3	−5.70

If the toaster oven costs $115.00 when Sandra started recording the price, and she decided to buy it after week 3, how much would she pay for the toaster oven?

5. A weather balloon floats into the sky from a valley. It starts at an elevation of $-7\frac{1}{4}$ feet and floats up to an elevation of $88\frac{6}{8}$ feet before getting stuck at the top of a tree. How far did the balloon travel upwards?

(A) $82\frac{1}{4}$ feet   (C) $-82\frac{1}{4}$ feet

(B) 80 feet   (D) 96 feet

6. To win a trivia game, Nathan must score at least 75 points. Each correct answer is worth $2\frac{1}{2}$ points, and each incorrect answer is worth $-\frac{1}{4}$ point. If he gets 35 questions correct and 32 questions incorrect, how many points does he have? Does he win?

7. Elly started a new job and wants to keep track of her finances. Elly makes $100 a week at her new job.

Week	Spent ($)
1	50.20
2	65.10
3	115.30
4	10.00

Part A

Select all the expressions that can be used to calculate Elly's bank balance over the 4 weeks if she started with $20.00 in her bank account.

☐ $-50.20 + 100 - 65.10 + 100 - 115.30 + 100 - 10 + 100 + 20$

☐ $420 - 240.6$

☐ $20 - 50.20 + 100 - 65.10 + 100 - 115.30 + 100 - 10 + 100$

☐ $400 - 50.20 - 65.10 - 115.30 - 10$

☐ $20 - 400 + 50.2 + 65.1 + 115.3 + 10$

Part B

How much money does Elly have in her bank account after the fourth week?

8. Pam drives on the highway, averaging $54\frac{1}{2}$ miles per hour for 3 hours. She then turns off the highway onto a smaller route, where she drives at an average rate of $34\frac{1}{4}$ miles per hour for another 3 hours. How far has she driven after 6 hours?

9. Sarah has a new job re-stocking soup cans. She keeps track of how many she puts on the shelf, while her manager keeps track of how many soup cans have been sold. Here are their respective lists.

Sarah's List

Day	# of Cans Added to Shelf
1	5
2	10
3	4

Manager's List

Day	# of Cans Sold
1	11
2	2
3	3

If there were 17 cans on the shelf when Sarah started her job, how many cans would be on the shelf when Sarah started day 4?

Name _____

Day 9

1. An expression is given:

$9x - 7y - 6x$

Write an equivalent expression by combining like terms.

[ ]

2. An expression is given:

$x(-1.8 - 6y)$

Use the distributive property to expand the expression.

[ ]

3. An expression is given:

$\frac{2}{5}x - \frac{2}{3}z + 8 - 2 - 0.3x$

Select all pairs of like terms.

☐ 8 and 2   ☐ $\frac{2}{5}x$ and $-\frac{2}{3}z$

☐ $\frac{2}{5}x$ and $0.3x$ ☐ $\frac{2}{5}x$ and $-0.3x$

☐ 8 and -2

4. An expression is given:

$35c + 14b - 7$

Use the GCF of the terms to write an equivalent expression.

[ ]

5. What is the sum of the two expressions?

$\left(\frac{2}{7}x - 6\right) + \left(\frac{3}{7}x + 8\right)$

[ ]

6. Find the difference of the two expressions.

$\left(\frac{4}{5}k + 1\right) - \left(\frac{3}{5}k - 2\right)$

[ ]

7. What coefficient of d makes the expressions equivalent?

$-\frac{1}{3}(2.7d + 1.8) = (?d - 0.6)$

[ ]

8. Joel read x books during summer vacation. Lucas read 3 more than twice the number of books Joel read. Erica read 5 less than four times the number of books Joel read.

Select all the expressions which represent the total number of book read by Joel, Lucas and Erica.

☐ $x + (2x + 3) + (5 - 4x)$

☐ $6x + 8$

☐ $7x + 2$

☐ $7x - 2$

☐ $x + (2x + 3) + (4x - 5)$

9. Select all expressions that are equivalent to $18a - 12$.

☐ $2(9a - 6)$

☐ $6(3a - 2)$

☐ $-3(6a + 4)$

☐ $3(6a + 4)$

☐ $-3(4 - 6a)$

---

10. An expression is given:

$-6m + 9n - 12$

Use a negative factor to factor the expression.

---

11. Carlos drove $8x + 13$ miles in two days. If he drove $3x + 5$ miles on the first day, how many miles did he drive on the second day?

---

12. What is the coefficient of r in the sum of $\left(\frac{4}{9}r + \frac{2}{3}\right)$ and $\left(\frac{1}{3}r + s\right)$?

Ⓐ $\frac{4}{12}$

Ⓑ $\frac{7}{9}$

Ⓒ $\frac{2}{3}$

Ⓓ $\frac{4}{9}$

---

13. An expression is given: $-\frac{3}{5}z - \frac{1}{2}$
Select all expressions that are equivalent.

☐ $-\frac{3}{5}z + \frac{1}{2}$

☐ $\frac{3}{5}z + \frac{1}{2}$

☐ $-\frac{1}{2} - \frac{3}{5}z$

☐ $-\frac{3}{5}z + \left(-\frac{1}{2}\right)$

☐ $\frac{1}{2} - \frac{3}{5}z$

---

14. An expression is given: $\frac{3h}{8}$
Which expression is equivalent?

Ⓐ $3h \div 8$

Ⓑ $\frac{3}{8h}$

Ⓒ $8 \div 3h$

Ⓓ $\frac{8h}{3}$

---

15. Find the difference of the two expressions.

$\left(\frac{5}{6}a - \frac{1}{5}b - 8\right) - \left(\frac{2}{3}a - \frac{7}{10}b - 3\right)$

Name _____

Day 10

1. The sales tax rate is 6%. If the price of a movie ticket is *x* dollars. Write an expression for the cost of the ticket including the tax.

2. Members of a store's reward program earn 10% of their purchases in points. Which expression represents the points earned on a purchase of *p* dollars?

Ⓐ $p + 10$

Ⓑ $10p$

Ⓒ $0.90p$

Ⓓ $0.10p$

3. The cost of renting a car is $26.50 plus $10 per day. Sales tax is 6%.

Select all expressions that represent the cost of renting a car for *d* days.

☐ $1.06(26.50 + 10d)$

☐ $28.09d$

☐ $26.50 + 6d$

☐ $28.09 + 10.6d$

☐ $26.50 + 1.06d$

4. The astronomy club has *x* members and wants to increase membership by 25%. Write an expression for the number of members if the goal is reached.

5. A store increases profits by marking up the price of soda by 15%. Which expression represents the new price of soda if the original cost is *s* dollars?

Ⓐ $0.15s$

Ⓑ $1.15s$

Ⓒ $0.85s$

Ⓓ $s + 15$

6. Marco's parents want to encourage him to save money during the 8 weeks of summer. They agree to add 15% to the balance of his savings account. If Marco saves *x* dollars a week, which expression represents the money he has at the end of summer?

Ⓐ $1.15(8x)$

Ⓑ $0.15(8x)$

Ⓒ $120x$

Ⓓ $1.15(x + 8)$

7. James runs laps around the park. The distance of a lap is *d* yards. On Monday, James runs 4 laps, Tuesday 3 laps, Thursday 5 laps and Saturday 6 laps. Write an expression for the distance James ran during the week.

8. A discount site decreases the price of cell phones by 60%. Select all the expressions that represent the discounted price of a phone costing d dollars.

☐ $d - 0.60$

☐ $0.40d$

☐ $d - 0.60d$

☐ $0.60d$

☐ $1 - 0.60d$

---

9. Match the algebraic and word expressions

	$0.20x$	$20 - x$	$1.20x$	$0.80x$
x increased by 20%	☐	☐	☐	☐
20% of x	☐	☐	☐	☐
x decreased by 20%	☐	☐	☐	☐
20 decreased by x	☐	☐	☐	☐

---

10. An office decreases paper waste by 35%. Originally the office produces w pounds of waste.

Part A

Which expression represents the waste reduction?

Ⓐ $w - 35$

Ⓑ $1.35w$

Ⓒ $0.35w$

Ⓓ $w - 0.35w$

Part B

How much paper waste do they produce now, if they originally produced 8 pounds per month?

---

11. The coach of a baseball team counts 240 males and n females in the bleachers. She determines that 80% of the male and female spectators are fans of the home team. The coach writes an expression $0.80n + 192$ to represent the number of home team fans. Is the coach correct?

Ⓐ The coach is not correct because there were more than 192 fans.

Ⓑ The coach is correct because the number of home town fans is 192

Ⓒ The coach is correct because the original expression $0.80(n + 240)$ is equivalent to $0.80n + 192$

Ⓓ The coach is not correct because the original expression $0.80(n + 240)$ is not equivalent to $0.80n + 192$

---

12. Amy reads 12% of a 356-page book each night.

Part A

Which expression represents the number of unread pages if Amy reads for x nights?

Ⓐ $356(0.12x)$

Ⓑ $(0.12x - 1)356$

Ⓒ $356 - 0.88x$

Ⓓ $356(1 - 0.12x)$

Part B

How many pages does Amy have left after 6 nights of reading?