Quiz on The Number System

THE NUMBER SYSTEM (7.NS.1)

Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.

1. The temperature outside is −5°F. Name the temperature that would make the sum of the two temperatures 0°F.	**2.** A scuba diver dives down 15 feet into the ocean. He then swims 8 feet back up towards the surface. What is the position of the scuba diver relative to the surface?
3. The top of a utility pole is 14 feet high. The base is at −2 feet. Find the length of the utility pole.	**4.** What is the value of the expression below? $$\frac{2}{7}+\left(-\frac{3}{4}\right)+\left(-\frac{2}{7}\right)+\frac{4}{3}$$

5. Sandy's monthly bank statement showed the following deposits and withdrawals:

$$-\$14.10, \quad \$41.50, \quad -\$11.03, \quad -\$7.25, \quad \$83.22$$

If Sandy's balance in the account was $56.75 at the beginning of the month, what was the account balance at the end of the month?

THE NUMBER SYSTEM (7.NS.2)

Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.

1. Alex and Charlene are playing a card game, where each card has a value. After Alex doubles his total cards value, he has a total of −16.5 points. What was his cards value before he doubled it?

2. Refer to question #1. Charlene has four −0.5 cards. What is the total value of her cards?

3. Evaluate the expression below using the properties of operations.

$$4.2 \times \left(-\frac{1}{3}\right) \div \frac{1}{6} \times (-10)$$

4. Write 3.035 as a fraction

5. The fraction $\frac{2}{11}$ can be converted to a repeating decimal. Show how to write the repeating decimal for this fraction.

THE NUMBER SYSTEM (7.NS.3)

Solve real-world and mathematical problems involving the four operations with rational numbers.

1. The mean temperature during the winter in the Arctic tundra is −34°C. You can convert degrees Celsius C to degrees Fahrenheit F by using the formula $F = \frac{9}{5}C + 32$. What is the mean temperature in degrees Fahrenheit?

2. A football team must move the ball forward at least 10 yards from its starting point to make a first down. If the team has 3 losses of 2 yards each and a gain of 12 yards, does the team make the first down? Justify your answer.

3. The table below shows Geo's scores at a stat golf tournament. What is Geo's average score for five rounds?

Round	1	2	3	4	5
Score	−3	1	−2	−4	3

4. Simplify the mathematical expression below.

$$\frac{4 \times \left(-5\frac{1}{2}\right)}{-1.4 + \left(-9\frac{3}{5}\right)}$$

5. Cheryl kept track of the changes in temperature one night. At 7:00 P.M. the temperature was 4°F. The chart below shows the changes in temperature for each of the next 3 hours. What was the temperature at 10:00 P.M?

Time	Change in Temperature (°F)
8:00 P.M.	−2.6
9:00 P.M.	+1.3
10:00 P.M.	−5.7

EXPRESSIONS AND EQUATIONS (7.EE.1)

Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.

1. Simplify (6x−5) − (3x−2).	**2.** What is the sum of (7x−6y) and (x + y)?
3. Factor $9x^2 - 27xy$.	**4.** The expression below was simplified using two properties of operations. Which properties were applied in Steps 1 and 3? $\qquad$ 4(10y + 28 + 5y) **Step 1** 4(10y + 5y + 28) _____ **Step 2** 4(15y + 28) **Step 3** 60y + 112 _____

5. Simplify the mathematical expression below.

$$\frac{3}{4}p - \frac{2}{3}r - \frac{1}{2}p - \frac{1}{6}r$$