Chapter 4 Test

1. Ginger knows that she has various fractions of a yard of different color fabric. She wants to find how much fabric she has in all. She decided to change all of her fractions to decimals and then add them together. Sort the fractions into the appropriate bins by their decimal type. 7.NS.2, 7.NS.2d

$\dfrac{4}{5}$ $\dfrac{5}{9}$ $\dfrac{3}{8}$ $\dfrac{9}{18}$ $\dfrac{5}{6}$

Terminating Decimal	Repeating Decimal, where the repeating digit is not 0

2. Ashanti has several electronics cords of different lengths. The cord for her tablet is $\dfrac{5}{3}$ yards long, the extension cord is $2.\overline{25}$ yards, the DSL cable is $2\dfrac{1}{4}$ yards, and the phone cord is 1.6 yards. Write the lengths of the cords in order from shortest to longest. 7.NS.2, 7.NS.2b

$\dfrac{5}{3}$ yards

$2.\overline{25}$ yards

$2\dfrac{1}{4}$ yards

1.6 yards

[____] < [____] < [____] < [____]

3. Select all of the situations that have whole numbers as their solutions. 7.NS.2, 7.NS.3

☐ Jayden ran $\dfrac{10}{3}$ miles. Ava ran $\dfrac{6}{5}$ times the distance that Jayden ran. How many miles did Ava run?

☐ Jada uses $1\dfrac{3}{4}$ cups of flour to make one batch of muffins. She has $10\dfrac{1}{2}$ cups of flour. How many batches of muffins can she make?

☐ Alberto is $5\dfrac{2}{3}$ feet tall. Adriana is $\dfrac{3}{4}$ times as tall as Alberto is. How many feet tall is Adriana?

☐ Polly has $4\dfrac{2}{3}$ cups of trail mix. She split it equally among two friends and herself. How many cups of trail mix did each person get?

4. Darian, Mabel, Peta, Dakota, and Liling listed their test scores in a table. 7.NS.2, 7.NS.2b

Student	Score
Darian	$0.\overline{93}$
Mabel	89%
Peta	$\dfrac{8}{9}$
Dakota	$\dfrac{19}{20}$
Liling	$0.\overline{8}$

Part A: Who received the highest score on the test?

Part B: Which students received the same score on the test?

5. Sort the numerical expressions into the appropriate bins based on the type of number that the value of the expression is. 7.NS.2, 7.NS.2b

$\dfrac{-5 + 4}{2}$　　$\dfrac{\pi}{2}$　　$4\dfrac{2}{3}$　　$|-9| + 3$　　$5.\overline{23}$　　-10%

Rational Number	Not a Rational Number

6. Complete the table by giving approximate measurements. If necessary, round grams to the nearest tenth, kilograms to the nearest ten-thousandth, and pounds to the nearest whole number. 7.RP.3, 7.NS.3

Kilograms	Pounds	Grams
	2	
		2,268

7. Eli has 80 skateboards. Three-fifths of his skateboards are longboards. Three-eighths of the longboards have custom graphics. What fraction of Eli's skateboards are longboards with custom graphics? How many longboards with custom graphics does he have? 7.NS.2, 7.NS.2a

Fraction:

Longboards with custom graphics:

8. Ricardo's rose bush was $\frac{9}{12}$ yard tall. He pruned the rose bush by cutting off $\frac{1}{9}$ yard. Ricardo measured the rose bush today, and it had grown $\frac{5}{6}$ yard more after it was pruned. How tall is Ricardo's rose bush now? Write your answer as a mixed number if it is greater than 1. 7.NS.1, 7.NS.3

9. Nikki is practicing for the 440-yard race. Select all of the measurements that are approximately equal to the distance of the race. 7.RP.3, 7.NS.3

- ☐ 400 meters when rounded to the nearest whole number
- ☐ 0.25 mile
- ☐ 400,000 kilometers when rounded to the nearest whole number
- ☐ 40,000 centimeters when rounded to the nearest thousand
- ☐ 147 feet

10. Kanye drank 1.9 liters of water today. Madison drank 1,800 milliliters of water today. Manisha drank 7.5 cups of water today. Who drank the most water today? Justify your response. 7.RP.3, 7.NS.3

11. Yesterday, Pablo had $4\frac{4}{9}$ quarts of iced tea, and Rosa had $3\frac{5}{12}$ quarts of iced tea. 7.NS.3, 7.EE.3

Part A: How much more iced tea did Pablo have than Rosa?

Part B: Pablo gave Rosa 15% of his iced tea today. How much iced tea do each of them have now? Write your answer in fraction form.

12. Kimberly is a hostess at a restaurant. A large party had a bill for $781.50. The restaurant adds a tip of 18% to the bill. Kimberly receives 8% of the tip, and each server receives $\frac{1}{5}$ of the remaining tip. How much does each server earn? Explain your method. 7.NS.2, 7.NS.2c, 7.NS.3

13. Rocío had $\frac{14}{9}$ cups of raisins. She used $\frac{3}{9}$ cup in her morning oatmeal and $\frac{5}{9}$ cup in her lunch salad. Later she bought $\frac{16}{9}$ cups more of raisins. The table shows the first two steps and the properties she used to find out how many cups of raisins she has now. 7.NS.1, 7.NS.1d

$\frac{14}{9} - \frac{3}{9} - \frac{5}{9} + \frac{16}{9}$		
Step 1	$\frac{14}{9} + \frac{16}{9} - \frac{3}{9} - \frac{5}{9}$	Commutative Property (+)
Step 2	$\left(\frac{14}{9} + \frac{16}{9}\right) + \left(-\frac{3}{9} - \frac{5}{9}\right)$	Associative Property (+)

Part A: How did Rocío use the Associative Property in the second step?

Part B: How many cups of raisins does Rocío have now?

14. Select whether or not the solution to each problem is a terminating decimal. 7.NS.2, 7.NS.2d

Yes	No	
☐	☐	Courtney ran 8 miles in 3 days. She runs the same distance each day. How many miles per day does she run?
☐	☐	George paid $9 for 4 bags of popcorn. Each bag cost the same amount. What is the cost of 1 bag of popcorn?
☐	☐	Brittany scored 90 points on the test. She got 72 of the problems correct. How many points was each problem worth?

15. Select whether each situation can be modeled by the number line. 7.NS.1, 7.NS.1b, 7.NS.1c
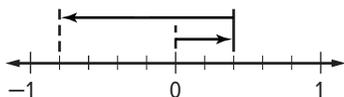
Yes   No

☐   ☐   the location of a hiker after he walked up a mountain a vertical distance of $\frac{2}{5}$ mile and then walked down a vertical distance of $\frac{4}{5}$ mile

☐   ☐   the problem $\frac{2}{5} + \left(-\frac{6}{5}\right)$

☐   ☐   the location of a kayaker after he put the kayak in the river $\frac{2}{5}$ kilometer above the town and then paddled downstream $\frac{6}{5}$ kilometers

☐   ☐   the problem $\frac{2}{5} - \frac{4}{5}$

☐   ☐   the problem $\frac{2}{5} - \frac{6}{5}$

16. Circle all of the problems that can be simplified to −6. 7.NS.2, 7.NS.2c, 7.NS.3

$\frac{7}{8} \div \frac{7}{48}$ $16\frac{1}{2} \div \left(-2\frac{3}{4}\right)$ $-2\frac{14}{15} \div \left(-\frac{22}{45}\right)$

$-\frac{28}{9} \div \frac{27}{14}$ $-\frac{81}{5} \div \frac{27}{10}$

17. Aaron drank $9\frac{7}{10} + \left(-4\frac{5}{6}\right)$ fluid ounces of orange juice this morning. Violet drank $3\frac{7}{12}$ more fluid ounces than Aaron. Daniel drank $2\frac{2}{3}$ fluid ounces less than Violet. Complete the table to show how many fluid ounces of orange juice each person drank. Write your answers as mixed numbers in simplest form. 7.NS.1, 7.NS.3

	Aaron	**Violet**	**Daniel**
Orange Juice (fl oz)			

18. Fernando, Andie, and Julio were tied for first place at math competition. The tie-breaker problem to determine the winner was to simplify the expression: $\frac{5}{8} - \frac{3}{4} - \frac{1}{6} + \frac{7}{12}$. The table shows the steps that each student took to solve the problem. 7.NS.1, 7.NS.1c, 7.NS.3

	Andie	**Julio**	**Fernando**
Step 1	$\left(\frac{5}{8} + \frac{7}{12}\right) + \left(-\frac{3}{4} - \frac{1}{6}\right)$	$\left(\frac{5}{8} + \frac{7}{12}\right) + \left(-\frac{3}{4} - \frac{1}{6}\right)$	$\left(\frac{5}{8} + \frac{7}{12}\right) + \left(-\frac{3}{4} - \frac{1}{6}\right)$
Step 2	$\left(\frac{15}{24} + \frac{14}{24}\right) + \left(-\frac{18}{24} - \frac{4}{24}\right)$	$\left(\frac{15}{24} + \frac{14}{24}\right) + \left(-\frac{18}{24} - \frac{4}{24}\right)$	$\frac{12}{20} - \frac{4}{10}$
Step 3	$\frac{29}{24} + \left(-\frac{22}{24}\right)$	$\frac{29}{24} - \frac{22}{24}$	$\frac{8}{10}$
Step 4	$\frac{51}{24}$	$\frac{7}{24}$	$\frac{4}{5}$

Part A: Who was the winner of the competition?

Part B: What errors did the other two students make?

19. Select all of the problems that can be simplified to $\frac{8}{15}$. 7.NS.2, 7.NS.2a

☐ $\frac{2}{3} \times \frac{4}{3} \times \frac{6}{10}$

☐ $\frac{5}{3} \times \left(-\frac{8}{7}\right) \times \frac{7}{25}$

☐ $\frac{2}{5} \times \left(-\frac{5}{7}\right) \times \left(-\frac{1}{3}\right)$

☐ $-\frac{5}{2} \times \left(-\frac{6}{5}\right) \times \left(-\frac{7}{15}\right) \times \left(-\frac{8}{21}\right)$

20. Lindsey ran $8\frac{7}{9} + \left(-4\frac{4}{5}\right)$ miles today. Andrew ran $\frac{35}{6} - \frac{32}{15}$ miles today. Amayeta ran $\frac{7}{2} + \frac{17}{45}$ miles today. Who ran the most miles today? Justify your response. 7.NS.1, 7.NS.3