NAME _____ DATE _____ PERIOD _____

Lesson 2 Problem-Solving Practice

Rational Numbers

1. One weekend, Nate compared his history homework to his younger sister Caroline's social studies homework. He found that for every $2\frac{1}{3}$ pages he had to read for homework, Caroline had to read one page for homework. How many pages did Nate read for every three pages Caroline read?

7

2. One foot is equivalent to 30.48 centimeters. Write this value as a mixed number in simplest form. $\mathbf{30\frac{12}{25}}$

3. Earth has a surface area of approximately 197,000,000 square miles and a total land area of approximately 58,000,000 square miles. What fraction of the Earth's surface is land? Write another fraction that is close to your answer and has a denominator of 10.

$\mathbf{\frac{58}{197}, \frac{3}{10}}$

4. Use the table of 6-ounce yogurt prices to answer the questions below.

Yogurt A	7 for $4.00
Yogurt B	$0.55 each

What is the unit price for Yogurt A expressed as a fraction? Which yogurt is the better deal? $\mathbf{\frac{4}{7}}$ **dollar; Yogurt B**

5. Jade is studying fractions and decimals in her math class. While working on homework one night, she noticed a pattern when she wrote each of the following decimals as fractions: $0.\overline{5}$, $0.\overline{7}$, $0.\overline{28}$, and $0.\overline{71}$. Write each of Jade's decimals as fractions.

$\mathbf{0.\overline{5} = \frac{5}{9}, 0.\overline{7} = \frac{7}{9}, 0.\overline{28} = \frac{28}{99}}$, **and** $\mathbf{0.\overline{71} = \frac{71}{99}}$

6. Refer to the information in Exercise 5. Use Jade's pattern to predict how to write $0.\overline{416}$ as a fraction. Check your answer using a different method.

$\mathbf{0.\overline{416} = \frac{416}{999};}$

$\mathbf{1000N = 416.416416\ldots}$

$\mathbf{-(N = 0.416416\ldots)}$

$\mathbf{999N = 416}$

$\mathbf{N = \frac{416}{999}}$

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Lesson 2 Homework Practice

Rational Numbers

Write each number as a fraction.

1. 29 **$\frac{29}{1}$**

2. 0 **$\frac{0}{1}$**

3. $3\frac{7}{8}$ **$\frac{31}{8}$**

4. -47 **$-\frac{47}{1}$**

5. $-5\frac{6}{7}$ **$-\frac{41}{7}$**

6. $4\frac{3}{20}$ **$\frac{83}{20}$**

7. $-7\frac{2}{15}$ **$-\frac{107}{15}$**

8. $10\frac{2}{9}$ **$\frac{92}{9}$**

9. 15 **$\frac{15}{1}$**

Write each decimal as a fraction or mixed number in simplest form.

10. 0.32 **$\frac{8}{25}$**

11. 0.42 **$\frac{21}{50}$**

12. $0.\overline{8}$ **$\frac{8}{9}$**

13. $-6.\overline{3}$ **$-6\frac{1}{3}$**

14. 0.91 **$\frac{91}{100}$**

15. 17.875 **$17\frac{7}{8}$**

16. $-0.666\ldots$ **$-\frac{2}{3}$**

17. $0.\overline{07}$ **$\frac{7}{99}$**

18. $9.\overline{7}$ **$9\frac{7}{9}$**

19. $7.\overline{75}$ **$7\frac{25}{33}$**

20. 0.525 **$\frac{21}{40}$**

21. -8.26 **$-8\frac{13}{50}$**

22. $6.\overline{5}$ **$6\frac{5}{9}$**

23. -4.12 **$-4\frac{3}{25}$**

24. 13.006 **$13\frac{3}{500}$**

Identify all sets to which each number belongs.

25. 15 **natural, whole, integer, rational**

26. $-3.\overline{8}$ **rational**

27. -5.075 **rational**

28. $\frac{50}{25}$ **natural, whole, integer, rational**

29. π **irrational**

30. $-\frac{4}{2}$ **integer, rational**

31. The smallest flowering plant is the flowering aquatic duckweed found in Australia. It is 0.0236 inch long and 0.0129 inch wide. Write these dimensions as fractions in simplest form.

$\frac{59}{2500}$ in. long and $\frac{129}{10{,}000}$ in. wide