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Real Numbers

Rational Number



A number that can be converted into a fraction $\frac{a}{b}$, $b \neq 0$

- Integers
 $\{ \dots, -2, -1, 0, 1, 2, \dots \}$
- Whole Numbers
 $\{ 0, 1, 2, 3, 4, \dots \}$
- Natural Numbers
 $\{ 1, 2, 3, 4, \dots \}$
- Decimals that are terminating
 ex. $\frac{1}{4} = 0.25$
- Decimals that are repeating
 ex. $\frac{1}{3} = 0.\overline{3}$
 $\frac{2}{3} = 0.\overline{6}$

Irrational Number

A number that can't be converted into a fraction $\pi = 3.141592$

Decimals that are not terminating and not repeating.

ex.

$$\frac{29}{19} = 1.526315789$$

P. 122

Decimals + Fractions

Sept 12

(cont'd)

Write as a decimal:

44.

$$\frac{2}{3} = 0.\overline{6}$$

45.

$$-\frac{7}{8} = -0.875$$

53.

$$\frac{2}{9} = 0.\overline{2}$$

Period: 2

Length: 1

55.

$$-\frac{1}{6} = -0.\overline{16} \quad \text{Period: } 6$$

$$\text{Length: } 1$$

59.

less than
greater than
equal to

$$2 < \frac{3}{4}$$

62.

$$\frac{-2 \times 4}{3 \times 4} = \frac{-8}{12}$$

$$\frac{-3}{4} = \frac{-9}{12}$$

$$\frac{-8}{12} > \frac{-9}{12}$$

65.

$$\begin{array}{l} 0.3 \\ 0.30 \end{array} < \begin{array}{l} 0.\overline{3} \\ 0.\overline{33} \end{array}$$

67.

$$1.21 = 1 \frac{21}{100}$$

69.

$$-\frac{7}{8} = -0.875$$

75.

$\frac{1}{2}$, $\frac{1}{3}$, $\frac{3}{5}$, 0.59

least

↓
greatest

0.50, 0.33, 0.60, 0.59

= 0.3, 0.5, 0.59, 0.60

$\frac{1}{3}$, $\frac{1}{2}$, 0.59, $\frac{3}{5}$

$$76. \quad 0.71, \quad 0.7\bar{1}, \quad \frac{711}{1000}, \quad 0.\bar{7}$$

$$0.71, 0.711, 0.7\bar{1}, 0.\bar{7}$$

$$80. \quad \frac{\text{numerator}}{\text{denominator}}$$

$$a) \quad -\frac{1}{8}$$

$$b) \quad -\frac{4}{5}$$

$$c) \quad -\frac{1}{16}$$

P. 128 Multiplying + Dividing Rational Numbers

$$1. \quad -8\frac{1}{2} \times (-1\frac{1}{4})$$

$$= -\frac{17}{2} \times -\frac{5}{4}$$

$$(-) \times (-) = (+)$$

$$= \frac{85}{8}$$

$$2. \quad -6\frac{2}{3} \times 3\frac{1}{2}$$

$$= -\frac{20}{3} \times \frac{7}{2}$$

$$= -\frac{140}{6}$$

$$= -\frac{70}{3}$$

$$4. \quad -4.9 \times 2.2$$

$$= -10.78$$

$$5. \quad -5.6 \times (-7.8)$$

$$= 43.68$$

$$6. \quad 3.4 \times (-9.7)$$

$$= -32.98$$

8.

$$-\frac{\cancel{2}}{\cancel{7}} \times \left(-\frac{\cancel{7}}{\cancel{2}} \right)$$

$$= \frac{14}{14}$$

$$= 1$$

$$10. \frac{5}{8} \times \frac{2}{3}$$

$$= \frac{10}{24}$$

$$= \frac{5}{12}$$

$$13. -0.46 \times (-0.5) \\ = 0.23$$

$$22. -2.25 \times (-1.4)$$

$$15. 1\frac{1}{2} \times 3\frac{1}{4} = 3.15$$

$$= \frac{3}{2} \times \frac{13}{4} \\ = \frac{39}{8}$$

Homework:

finish p. 122, 123
start at 1

4 p. 128⁴⁰