

2.3 Problem Solving With Rational Numbers in Fraction Form

MathLinks 9, pages 63–71

Key Ideas Review

Select words from column B to complete the statements in column A.

A	B
1. The addition of rational numbers can be modelled on a _____.	a) adding the opposite
2. Subtraction can be modelled on a number line by _____.	b) improper fractions
3. Rational numbers expressed as mixed numbers can be added, subtracted, multiplied, and divided by first writing them as _____.	c) multiplication and division
4. Rational numbers expressed as proper or improper fractions can be added, subtracted, multiplied, and divided in the same way as _____.	d) positive fractions
5. The sign of the product or quotient can be predicted from the sign rules for _____.	e) number line

Check Your Understanding

6. Estimate and calculate. Show your work.

a) $-\frac{3}{10} + \left(-\frac{7}{10}\right)$

b) $\frac{1}{3} + \frac{5}{6}$

7. Estimate and calculate. Show your work.

a) $\left(-\frac{3}{5}\right) \times \frac{2}{3}$

b) $\left(-\frac{4}{9}\right) \times \left(-\frac{3}{8}\right)$

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

d) $3\frac{1}{4} - \left(-4\frac{5}{12}\right)$

c) $\left(-\frac{6}{7}\right)\left(-\frac{5}{12}\right)$

d) $-\frac{5}{6} \times 2\frac{1}{4}$

8. Estimate and calculate. Show your work.

a) $-\frac{7}{8} \div -\frac{3}{4}$

b) $1\frac{1}{2} \div (-1\frac{3}{8})$

c) $-3\frac{2}{3} \div (-1\frac{1}{6})$

d) $\frac{1}{3} \div \frac{3}{4}$

9. Luc has 1 h of homework to do. He has assignments to complete for social studies and math, and a science test to begin studying for. He spends $\frac{2}{5}$ of the time completing the social studies assignment, and $\frac{1}{3}$ of the time on math. How much time does Luc have left to study for the science test? Show two ways of answering this question.

10. Alyssa purchased 120 shares of ElecTeck stock for $1\frac{1}{4}$ dollars per share. She also purchased 200 shares of Apexal stock for $\frac{4}{5}$ of a dollar per share. After six months, the value of ElecTeck stock went up by $1\frac{1}{2}$ and Apexal lost $\frac{1}{4}$ of its value. What was the total value of Alyssa's stock after six months?

11. A pine tree growing on shallow soil has roots extend one-eleventh of its height below the surface. The roots extend 0.87 m deep. How high is the tree, to the nearest tenth? Draw a diagram to represent the situation. Justify your answer.