

1.7: Multiplying and Dividing Rational Numbers

Warm-Up

Take up quiz!

Some General Feedback:

- in all solutions, follow BEDMAS!
- write solutions going vertically, not horizontally
- answers should be in lowest terms
- if a question is given in decimals, the answer should be too
- if a question is given in fractions, the answer should be too
- watch out for “a, b and c” in Pythagorean questions (only use numbers and variables identified in question/diagram)

Multiplying and Dividing Rational Numbers

When multiplying and dividing rational numbers, be aware of where the negatives are.

Examples

1. $-\frac{3}{4} \times \left(\frac{4}{-3} \right)$

HELPFUL HINTS

2. $2 \times \left(-\frac{3}{-4}\right) \div \left(-1\frac{2}{5}\right)$



3. $\frac{3}{4} \div \left(\frac{1}{2}\right) + \left(-2\frac{2}{5}\right)$

4. $\left[-1\frac{2}{7}-\left(-1\frac{1}{3}\right)\right]\div\left(\frac{-1}{7}\right)$

Question 1:

$$\begin{aligned} & -\frac{3}{4} \times \left(\frac{4}{-3} \right) \\ &= \frac{-3}{4} \times \left(\frac{4}{-3} \right) \\ &= 1 \end{aligned}$$

Question 2:

$$\begin{aligned} & 2 \times \left(-\frac{-3}{-4} \right) \div \left(-1\frac{2}{5} \right) \\ &= \frac{2}{1} \times \left(\frac{-3}{4} \right) \div \left(\frac{-7}{5} \right) \\ &= \left(\frac{-3}{2} \right) \div \left(\frac{-7}{5} \right) \\ &= \left(\frac{-3}{2} \right) \times \left(\frac{5}{-7} \right) \\ &= \frac{-15}{-14} = 1\frac{1}{14} \end{aligned}$$

Question 3:

$$\begin{aligned} & \left[-1\frac{2}{7} - \left(1\frac{1}{-3} \right) \right] \div \left(\frac{-1}{7} \right) \\ &= \left[\frac{-9}{7} - \left(\frac{-4}{3} \right) \right] \div \left(\frac{-1}{7} \right) \\ &= \left[\frac{-27 - (-28)}{21} \right] \div \left(\frac{-1}{7} \right) \\ &= \frac{1}{21} \div \left(\frac{-1}{7} \right) \\ &= \frac{1}{21} \times \left(\frac{7}{-1} \right) = \frac{1}{-3} \end{aligned}$$

Question 4:

$$\begin{aligned} & \frac{3}{4} \div \left(\frac{1}{2} \right) + \left(-2\frac{2}{5} \right) \\ &= \frac{3}{4} \times \left(\frac{2}{1} \right) + \left(-2\frac{2}{5} \right) \\ &= \left(\frac{6}{4} \right) + \left(\frac{-12}{5} \right) \\ &= \frac{30 + (-48)}{20} \\ &= \frac{-18}{20} = -\frac{9}{10} \end{aligned}$$