

Questions: Arithmetic on numerical fractions

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Summary

A selection of questions for the study guide on arithmetic on numerical fractions.

Before attempting these questions, it is highly recommended that you read [Guide: Arithmetic on numerical fractions](#). You may also find [Calculator: Highest common factor, lowest common multiple](#) useful.

Q1

Calculate the following additions and subtractions by first finding a common denominator. Write your answer in its simplest form.

1.1. $\frac{3}{8} + \frac{1}{8}$

1.2. $-\frac{2}{7} + \frac{5}{7}$

1.3. $\frac{13}{20} - \frac{17}{20}$

1.4. $\frac{1}{3} + \frac{1}{6}$

1.5. $\frac{3}{4} - \frac{1}{2}$

1.6. $\frac{2}{5} + \frac{1}{10}$

1.7. $\frac{5}{6} - \frac{1}{3}$

1.8. $\frac{1}{2} + \frac{3}{10}$

1.9. $\frac{7}{10} + \frac{2}{15}$

1.10. $\frac{3}{8} + \frac{5}{10}$

1.11. $\frac{3}{4} - \frac{2}{5}$

$$1.12. \quad -\frac{2}{3} + \frac{3}{4}$$

$$1.13. \quad \frac{9}{10} - \frac{1}{15}$$

$$1.14. \quad -\frac{7}{12} - \frac{1}{15}$$

$$1.15. \quad \frac{11}{14} + 1$$

Q2

Calculate the following multiplications. Write your answer in its simplest form.

$$2.1. \quad \frac{1}{4} \cdot \frac{1}{3}$$

$$2.2. \quad \frac{2}{5} \cdot \frac{3}{7}$$

$$2.3. \quad \frac{3}{5} \cdot 10$$

$$2.4. \quad \frac{5}{8} \cdot \frac{4}{15}$$

$$2.5. \quad \frac{2}{3} \cdot \frac{9}{10}$$

$$2.6. \quad -\frac{1}{7} \cdot \frac{3}{4}$$

$$2.7. \quad \frac{6}{11} \cdot \frac{22}{3}$$

$$2.8. \quad 8 \cdot \frac{5}{12}$$

$$2.9. \quad -\frac{7}{9} \cdot \frac{6}{5}$$

$$2.10. \quad \frac{4}{5} \cdot \left(-\frac{15}{16}\right)$$

$$2.11. \quad \frac{12}{13} \cdot \frac{1}{6}$$

$$2.12. \quad \left(-\frac{9}{10}\right) \cdot \left(-\frac{5}{12}\right)$$

Q3

Calculate the following divisions. Write your answer in its simplest form.

$$3.1. \quad \frac{1}{3} \div \frac{1}{6}$$

$$3.2. \quad \frac{2}{5} \div \frac{3}{4}$$

$$3.3. \quad \frac{3}{8} \div 2$$

$$3.4. \quad \frac{4}{9} \div \frac{8}{3}$$

$$3.5. \quad 5 \div \frac{1}{4}$$

$$3.6. \quad \frac{5}{7} \div \frac{10}{21}$$

$$3.7. \quad -\frac{1}{2} \div \frac{3}{5}$$

$$3.8. \quad \frac{6}{11} \div 3$$

$$3.9. \quad \frac{7}{10} \div \left(-\frac{14}{15}\right)$$

$$3.10. \quad -\frac{8}{9} \div \frac{2}{3}$$

$$3.11. \quad \frac{11}{12} \div \frac{22}{9}$$

$$3.12. \quad \left(-\frac{4}{7}\right) \div (-8)$$

Q4

Calculate the following by first converting the mixed numbers into improper fractions. Write your answer in its simplest form.

$$4.1. \quad 1\frac{1}{3} + 2\frac{1}{6}$$

$$4.2. \quad 3\frac{1}{2} - 1\frac{1}{4}$$

$$4.3. \quad 1\frac{1}{5} \cdot 2\frac{1}{2}$$

$$4.4. \quad 4\frac{1}{2} \div 1\frac{1}{8}$$

$$4.5. \quad 2\frac{3}{4} + 1\frac{1}{3}$$

$$4.6. \quad 5\frac{1}{8} - 2\frac{3}{4}$$

$$4.7. \quad -1\frac{2}{5} \cdot \frac{3}{7}$$

$$4.8. \quad 3\frac{1}{4} \div -1\frac{5}{8}$$

4.9. $-2\frac{1}{3} - 1\frac{3}{5}$

4.10. $1\frac{5}{6} \cdot 2\frac{2}{11}$

4.11. $-4\frac{1}{5} \div -2\frac{1}{10}$

4.12. $3\frac{1}{9} + 1\frac{5}{6}$

[After attempting the questions above, please click this link to find the answers.](#)

Version history and licensing

v1.0: initial version created 12/25 by Donald Campbell as part of a University of St Andrews VIP project.

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