

Part I Multiplication of Proper Fractions

$$\frac{4}{25} \times \frac{15}{8}$$

$$= \frac{\overset{1}{\cancel{4}} \times \overset{3}{\cancel{15}}}{\underset{5}{\cancel{25}} \times \underset{2}{\cancel{8}}}$$

$$= \frac{1 \times 3}{5 \times 2}$$

$$= \frac{3}{10}$$

Steps

1. Multiply the numerator by the numerator and the denominator by the denominator.
2. Simplify by canceling out common factors between the numerator and the denominator.
3. Multiply across to obtain answer.

1) $\frac{3}{5} \times \frac{15}{11}$

$$= \frac{3 \times \square}{\square \times 11}$$

$$= \frac{3 \times \square}{1 \times 11}$$

$$= \frac{\square}{\square}$$

2) $\frac{7}{12} \times \frac{8}{21}$

$$= \frac{\square \times 8}{\square \times 21}$$

$$= \frac{1 \times \square}{3 \times \square}$$

$$= \frac{\square}{\square}$$

3) $\frac{5}{7} \times \frac{21}{3}$

$$= \frac{\square \times \square}{\square \times \square}$$

$$= \frac{\square \times \square}{\square \times \square}$$

$$= \frac{\square}{\square} = \square$$

4) $\frac{3}{4} \times \frac{5}{9}$

5) $\frac{5}{14} \times \frac{16}{15}$

6) $\frac{21}{20} \times \frac{10}{35}$

7) $\frac{7}{4} \times \frac{5}{3}$

8) $\frac{10}{9} \times \frac{27}{5}$

9) $\frac{45}{8} \times \frac{17}{15}$

Part II Multiplication of a Whole Number and a Fraction

$$\begin{aligned}
 & 2 \times \frac{3}{14} \\
 = & \frac{2}{1} \times \frac{3}{14} \\
 = & \frac{\cancel{2} \times 3}{1 \times \cancel{14}_7} \\
 = & \frac{2 \times 3}{1 \times 14} \\
 = & \frac{4}{7}
 \end{aligned}$$

Steps

1. Write the whole number as a fraction with a denominator of 1.
2. Multiply the numerator by the numerator and the denominator by the denominator.
3. Simplify by canceling out common factors between the numerator and the denominator.
4. Multiply across to obtain answer.

$$\begin{aligned}
 10) \quad & 3 \times \frac{7}{12} \\
 = & \frac{3}{\square} \times \frac{7}{12} \\
 = & \frac{3 \times \square}{\square \times 12} \\
 = & \frac{\square \times 7}{1 \times \square} \\
 = & \frac{\square}{\square}
 \end{aligned}$$

$$\begin{aligned}
 11) \quad & \frac{8}{16} \times 4 \\
 = & \frac{8}{16} \times \frac{\square}{1} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square \times \square}{1 \times 1} \\
 = & \frac{\square}{\square} = \square
 \end{aligned}$$

$$\begin{aligned}
 12) \quad & 6 \times \frac{15}{27} \\
 = & \frac{\square}{\square} \times \frac{\square}{\square} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square}{\square}
 \end{aligned}$$

$$13) \quad 2 \times \frac{3}{8}$$

$$14) \quad 6 \times \frac{5}{24}$$

$$15) \quad \frac{4}{36} \times 9$$

$$16) \quad \frac{25}{12} \times 8$$

$$17) \quad \frac{26}{15} \times 6$$

$$18) \quad 9 \times \frac{2}{15}$$

Part III Multiplication of Mixed Fractions

$$\begin{aligned}
 & 2\frac{1}{5} \times \frac{15}{22} \\
 = & \frac{11}{5} \times \frac{15}{22} \\
 = & \frac{\cancel{11} \times \cancel{15}^3}{\cancel{5} \times \cancel{22}_2} \\
 = & \frac{1 \times 3}{1 \times 2} \\
 = & \frac{3}{2}
 \end{aligned}$$

Steps

1. Write all terms as fractions or improper fractions.
2. Multiply the numerator by the numerator and the denominator by the denominator.
3. Simplify by canceling out common factors between the numerator and the denominator.
4. Multiply across to obtain answer.

$$\begin{aligned}
 19) \quad & 7\frac{1}{3} \times \frac{27}{11} \\
 = & \frac{\square}{3} \times \frac{27}{11} \\
 = & \frac{\square \times 27}{\square \times 11} \\
 = & \frac{\square \times \square}{1 \times 1} \\
 = & \frac{\square}{\square} = \square
 \end{aligned}$$

$$\begin{aligned}
 20) \quad & \frac{8}{9} \times 1\frac{5}{12} \\
 = & \frac{8}{9} \times \frac{\square}{12} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{4 \times \square}{9 \times \square} \\
 = & \frac{\square}{\square}
 \end{aligned}$$

$$\begin{aligned}
 21) \quad & 2\frac{3}{4} \times 1\frac{4}{6} \\
 = & \frac{\square}{4} \times \frac{\square}{6} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square}{\square}
 \end{aligned}$$

$$22) \quad \frac{5}{6} \times 1\frac{1}{3}$$

$$23) \quad 2\frac{4}{9} \times \frac{27}{10}$$

$$24) \quad 5\frac{3}{7} \times \frac{21}{4}$$

$$25) \quad 2\frac{3}{16} \times 1\frac{7}{15}$$

$$26) \quad \frac{3}{11} \times 1\frac{2}{3}$$

$$27) \quad \frac{1}{5} \times 3\frac{2}{7}$$

Part IV Division of Fractions, Mixed Fraction, and Whole Numbers

$$\begin{aligned}
 & 2\frac{1}{5} \div \frac{7}{10} \\
 = & \frac{11}{5} \div \frac{7}{10} \\
 = & \frac{11}{5} \times \frac{10}{7} \\
 = & \frac{11 \times 10^{\cancel{2}}}{\cancel{1}5 \times 7} \\
 = & \frac{11 \times 2}{1 \times 7} \\
 = & \frac{22}{7}
 \end{aligned}$$

Steps

1. Write all terms as fractions or improper fractions.
2. NEVER divide. Multiply by the reciprocal of the 2nd term.
3. Multiply the numerator by the numerator and the denominator by the denominator.
4. Simplify by canceling out common factors between the numerator and the denominator.
5. Multiply across to obtain answer.

$$\begin{aligned}
 28) \quad & 2\frac{2}{3} \div \frac{24}{9} \\
 = & \frac{\square}{3} \div \frac{24}{9} \\
 = & \frac{\square}{3} \times \frac{9}{\square} \\
 = & \frac{\square \times \square}{3 \times \square} \\
 = & \frac{\square \times \square}{1 \times 3} \\
 = & \frac{\square}{\square} = \square
 \end{aligned}$$

$$\begin{aligned}
 29) \quad & 7\frac{1}{2} \div 2\frac{1}{12} \\
 = & \frac{\square}{2} \div \frac{\square}{12} \\
 = & \frac{\square}{2} \times \frac{12}{\square} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{3 \times 6}{\square \times \square} \\
 = & \frac{\square}{\square}
 \end{aligned}$$

$$\begin{aligned}
 30) \quad & 7 \div 1\frac{4}{6} \\
 = & \frac{\square}{\square} \div \frac{\square}{\square} \\
 = & \frac{\square}{\square} \times \frac{\square}{\square} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square \times \square}{\square \times \square} \\
 = & \frac{\square}{\square}
 \end{aligned}$$

$$31) \quad \frac{4}{3} \div \frac{16}{15}$$

$$32) \quad \frac{7}{16} \div 1\frac{2}{5}$$

$$33) \quad 3\frac{2}{3} \div \frac{33}{15}$$

34) $\frac{8}{25} \div \frac{4}{15}$

35) $8 \div \frac{3}{4}$

36) $\frac{2}{5} \div 3$

37) $6 \div \frac{3}{4}$

38) $2\frac{1}{7} \div \frac{60}{25}$

39) $1\frac{4}{5} \div 2\frac{2}{5}$

40) $5\frac{7}{11} \div 1\frac{9}{22}$

41) $\frac{16}{3} \div \frac{32}{27}$

42) $3 \div 5\frac{2}{5}$

Answers:

1) $\frac{9}{11}$

2) $\frac{2}{9}$

3) 5

4) $\frac{5}{12}$

5) $\frac{8}{21}$

6) $\frac{3}{10}$

7) $\frac{35}{12}$

8) 6

9) $\frac{51}{8}$

10) $\frac{7}{4}$

11) 2

12) $\frac{10}{3}$

13) $\frac{3}{4}$

14) $\frac{5}{4}$

15) 1

16) $\frac{50}{3}$

17) $\frac{52}{5}$

18) $\frac{6}{5}$

19) 18

20) $\frac{34}{27}$

21) $\frac{55}{12}$

22) $\frac{10}{9}$

23) $\frac{33}{5}$

24) $\frac{57}{2}$

25) $\frac{77}{24}$

26) $\frac{5}{11}$

27) $\frac{23}{35}$

28) 1

29) $\frac{18}{5}$

30) $\frac{21}{5}$

31) $\frac{5}{4}$

32) $\frac{5}{16}$

33) $\frac{5}{3}$

34) $\frac{6}{5}$

35) $\frac{32}{3}$

36) $\frac{2}{15}$

37) 8

38) $\frac{57}{2}$

39) $\frac{3}{4}$

40) 4

41) $\frac{9}{2}$

42) $\frac{9}{17}$