

Maths

Dividing a fraction by a fraction

Miss Parnham



Dividing a fraction by a fraction

1. Divide the fractions.

Give answers in their simplest form.

a) $\frac{1}{3} \div \frac{1}{9}$

b) $\frac{3}{4} \div \frac{1}{8}$

c) $\frac{8}{9} \div \frac{5}{6}$

d) $\frac{5}{12} \div \frac{3}{7}$

e) $-\frac{2}{3} \div \frac{1}{12}$

f) $\frac{3}{5} \div \left(-\frac{7}{15}\right)$

g) $\frac{5}{9} \div \frac{-7}{12}$

h) $-\frac{6}{7} \div \left(-\frac{3}{8}\right)$

2. Tommy wants to calculate $\frac{4}{5} \div \frac{2}{7}$

$$\frac{4}{5} = \frac{4}{5} \times \frac{2}{7} \times \frac{7}{2}$$

$$\frac{4}{5} \div \frac{2}{7} = \frac{4}{5} \times \frac{7}{2}$$

$$= \frac{4 \times 7}{5 \times 2} = \frac{28}{10} = 2\frac{4}{5}$$

He knows a fraction multiplied by its reciprocal is equal to 1

He divides by $\frac{2}{7}$

Then he multiplies to find the answer.

Use Tommy's method with these

divisions. a) $\frac{3}{5} \div \frac{8}{9}$

b) $\frac{7}{10} \div \frac{2}{5}$



Dividing a fraction by a fraction

3. Divide the fractions.

Give answers in their simplest form.

a) $\frac{7}{9} \div 2\frac{3}{4}$

b) $-1\frac{1}{9} \div \frac{3}{4}$

c) $2\frac{3}{11} \div \frac{5}{6}$

d) $-4\frac{7}{12} \div \frac{10}{11}$

e) $1\frac{6}{11} \div 3\frac{1}{3}$

f) $2\frac{1}{6} \div \left(-3\frac{5}{8}\right)$

g) $4\frac{7}{8} \div 2\frac{1}{4}$

h) $-6\frac{7}{8} \div \left(-2\frac{3}{16}\right)$

4. Complete the multiplication grid.

| | | |
|---|-----------------|----------------|
| × | | $3\frac{1}{4}$ |
| | $-\frac{8}{15}$ | $1\frac{1}{6}$ |
| | | -6 |

5. Jack needs 15 inches of ribbon to decorate a gift box. He knows that there are 36 inches in 1 yard.

If he has $5\frac{3}{8}$ yards of ribbon, how many boxes can he complete?



Answers



Dividing a fraction by a fraction

1. Divide the fractions.

Give answers in their simplest form.

$$\text{a) } \frac{1}{3} \div \frac{1}{9} = 3$$

$$\text{b) } \frac{3}{4} \div \frac{1}{8} = 6$$

$$\text{c) } \frac{8}{9} \div \frac{5}{6} = 1\frac{1}{15}$$

$$\text{d) } \frac{5}{12} \div \frac{3}{7} = \frac{35}{36}$$

$$\text{e) } -\frac{2}{3} \div \frac{1}{12} = -8$$

$$\text{f) } \frac{3}{5} \div \left(-\frac{7}{15}\right) = -1\frac{2}{7}$$

$$\text{g) } \frac{5}{9} \div \frac{-7}{12} = -\frac{20}{21}$$

$$\text{h) } -\frac{6}{7} \div \left(-\frac{3}{8}\right) = 2\frac{2}{7}$$

2. Tommy wants to calculate $\frac{4}{5} \div \frac{2}{7}$

$$\frac{4}{5} = \frac{4}{5} \times \frac{2}{7} \times \frac{7}{2}$$

$$\frac{4}{5} \div \frac{2}{7} = \frac{4}{5} \times \frac{7}{2}$$

$$= \frac{4 \times 7}{5 \times 2} = \frac{28}{10} = 2\frac{4}{5}$$

He knows a fraction multiplied by its reciprocal is equal to 1

He divides by $\frac{2}{7}$

Then he multiplies to find the answer.

Use Tommy's method with these

divisions. a) $\frac{3}{5} \div \frac{8}{9} = \frac{3 \times 9}{5 \times 8} = \frac{27}{40}$ b) $\frac{7}{10} \div \frac{2}{5} = \frac{7 \times 5}{10 \times 2} = \frac{35}{20} = 1\frac{3}{4}$



Dividing a fraction by a fraction

3. Divide the fractions.

Give answers in their simplest form.

$$\text{a) } \frac{7}{9} \div 2\frac{3}{4} = \frac{28}{99}$$

$$\text{b) } -1\frac{1}{9} \div \frac{3}{4} = -1\frac{13}{27}$$

$$\text{c) } 2\frac{3}{11} \div \frac{5}{6} = 2\frac{8}{11}$$

$$\text{d) } -4\frac{7}{12} \div \frac{10}{11} = -5\frac{1}{24}$$

$$\text{e) } 1\frac{6}{11} \div 3\frac{1}{3} = \frac{51}{110}$$

$$\text{f) } 2\frac{1}{6} \div \left(-3\frac{5}{8}\right) = -\frac{52}{87}$$

$$\text{g) } 4\frac{7}{8} \div 2\frac{1}{4} = 2\frac{1}{6}$$

$$\text{h) } -6\frac{7}{8} \div \left(-2\frac{3}{16}\right) = 3\frac{1}{7}$$

4. Complete the multiplication grid.

| | | |
|-----------------|------------------|----------------|
| \times | $-\frac{4}{5}$ | $1\frac{3}{4}$ |
| $\frac{2}{3}$ | $-\frac{8}{15}$ | $1\frac{1}{6}$ |
| $-3\frac{3}{7}$ | $2\frac{26}{35}$ | -6 |

5. Jack needs 15 inches of ribbon to decorate a gift box. He knows that there are 36 inches in 1 yard.

$$5\frac{3}{8} \div \frac{5}{12} = 12\frac{9}{10}$$

If he has $5\frac{3}{8}$ yards of ribbon, how many boxes can he complete? **12 boxes**

