MULTIPLYING AND DIVIDING FRACTIONS

Multiplication

- Multiply the numerators and put in the numerator of the result
- Multiply the denominators and put in the denominator of the result

$$\frac{7}{8} \times \frac{4}{9} = \frac{7 \times 4}{8 \times 9} = \frac{28}{72} = \frac{7}{18}$$

Simplify by dividing by 4

Multiplication - *Let's Try It!*

$$\frac{7}{9} \times \frac{1}{2} = \frac{7}{18}$$

$$\frac{4}{7} \times \frac{9}{11} = \frac{36}{77}$$

$$\frac{7}{5} \times \frac{1}{3} = \frac{7}{15}$$

$$\frac{30}{4} \times \frac{7}{14} = \frac{210}{56}$$

$$\frac{210}{56}$$

These numbers get pretty big!

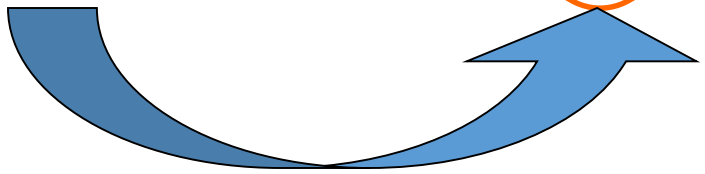
What if we needed to multiply *again*?

Let’s make the fraction more simple,
so it will be easier to use in the future.

Division

- Just like multiplication with one more step
- Invert the second fraction and multiply

$$\frac{3}{8} \div \frac{1}{2} = \frac{3}{8} \times \frac{2}{1} = \frac{6}{8} = \frac{3}{4}$$



Division - *Let's Try It!*

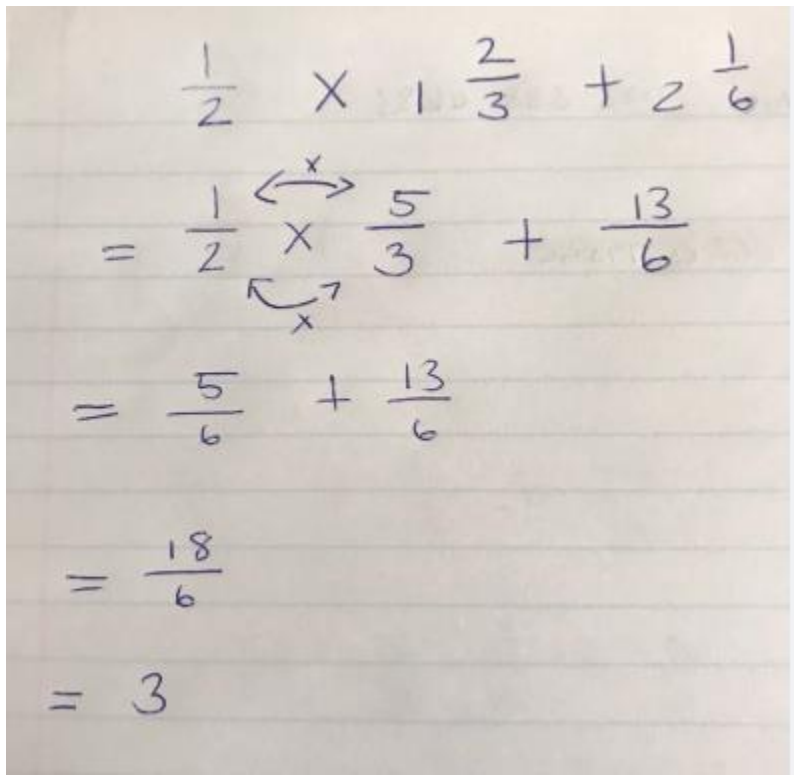
$$\frac{7}{9} \div \frac{1}{2} = \frac{14}{9}$$

$$\frac{4}{7} \div \frac{9}{11} = \frac{44}{63}$$

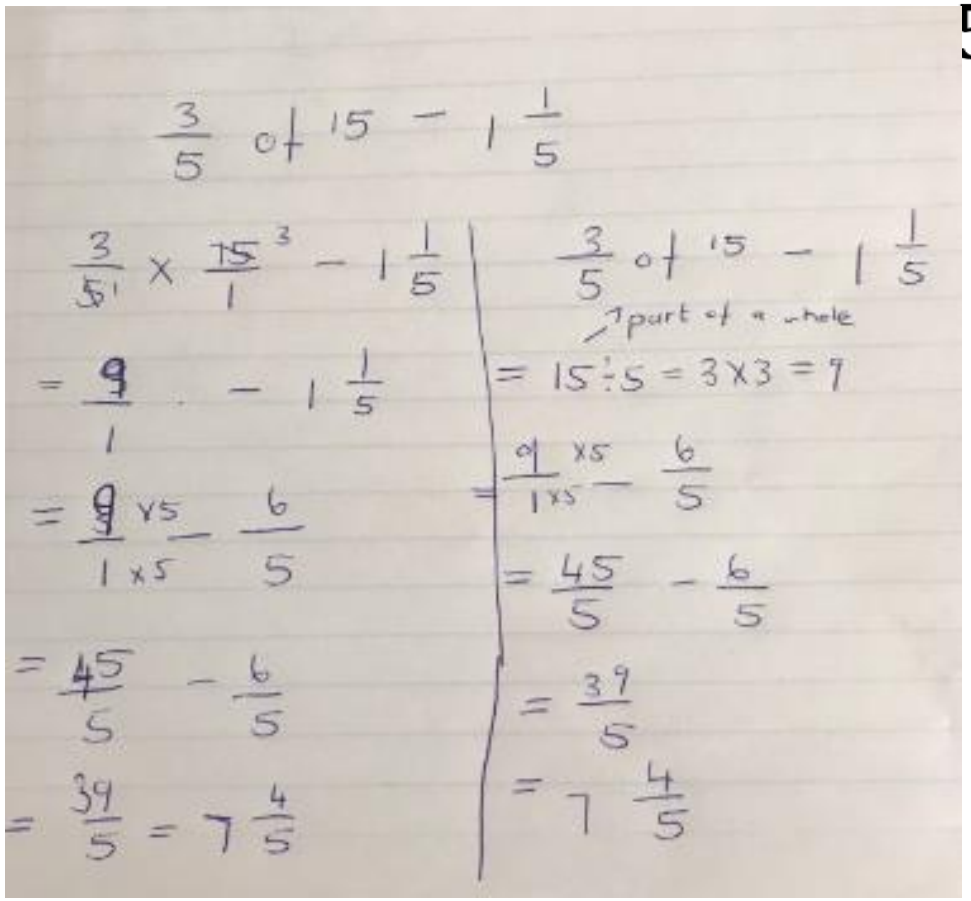
$$\frac{7}{5} \div \frac{1}{3} = \frac{21}{5}$$

$$\frac{20}{4} \div \frac{7}{10} = \frac{50}{7}$$

$$\frac{1}{2} \times 1\frac{2}{3} + 2\frac{1}{6}$$



$$\frac{3}{5} \text{ of } 15 \; - 1\frac{1}{5}$$



$$\frac{2}{3}+\frac{4}{5}\times\frac{15}{16}\div\frac{1}{6}$$

$$\frac{2}{3} + \frac{4}{5}^{1} \times \frac{12^{3}}{16_{4}} \div \frac{1}{6}$$

// flip and times

$$= \frac{2}{3} + \frac{4}{5} \frac{3}{_{2}4} \times \frac{6^{3}}{1}$$

$$= \frac{2}{3}^{\times 2}_{\times 2} + \frac{9}{2}^{\times 3}_{\times 3}$$

$$= \frac{4}{6} + \frac{27}{6}$$

$$= \frac{31}{6}$$

$$= 5\frac{1}{6}$$

$$\frac{11}{12} \times \frac{48}{22} \div \frac{1}{3} - \frac{1}{2}$$

$$\frac{11}{12} \times \frac{48}{22} \div \frac{1}{3} - \frac{1}{2}$$

$$= \frac{4}{2} \div \frac{1}{3} - \frac{1}{2}$$

$$= \frac{4}{2} \times \frac{3}{1} - \frac{1}{2}$$

$$= \frac{12}{2} - \frac{1}{2}$$

$$= \frac{11}{2}$$

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

- Ex 6.6 pg. 85

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b) $\frac{2}{27}$

c) $\frac{20}{9}$ $2\frac{2}{9}$

d) $\frac{7}{6} \times \frac{1}{3} = \frac{7}{18}$

e) $\frac{7}{5} \times \frac{1}{4} = \frac{7}{20}$

2. a) 10

b) $\frac{4}{5} \times \frac{90}{1} = 72$

Note: Cross cancelling some factors is a useful technique to teach when multiplying fractions.

c) $\frac{30}{11}$ = $2\frac{8}{11}$

d) $\frac{9}{8} \times \frac{12}{1} = \frac{108}{8} = \frac{27}{2}$ = $13\frac{1}{2}$

e) $\frac{7}{3} \times \frac{9}{1} = \frac{63}{3} = 21$

3. Calculate and leave in simplest form:

a) $\frac{3}{14}$

b) $\frac{7}{1\,000}$

c) $\frac{1}{4} \times \frac{22\,500}{1} = 5\,625$

d) $\frac{12}{1} \times \frac{7}{12} = 7$

e) $\frac{3}{500} \times \frac{10\,000}{1} = \frac{3}{1} \times \frac{20}{1} = 60$

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