



### Challenge

Without working out the answers, predict which of these four calculations will result in the greatest answer.

$$\frac{2}{3} + \frac{3}{5}$$

$$\frac{3}{4} - \frac{1}{3}$$

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

$$\frac{5}{6} \div 5$$

Which calculation will give the smallest answer?

Justify your predictions.

What about these four calculations? Predict which will give the greatest and smallest answers. Why do you think those calculations will give the greatest and smallest answers?

$$\frac{3}{4} + \frac{1}{6}$$

$$\frac{5}{6} - \frac{3}{4}$$

$$\frac{1}{3} \times \frac{3}{8}$$

$$\frac{2}{5} \div 4$$



### Think about ...

What mental images can you create to help you determine which calculations will give the greatest and smallest answers?



Think about what happens to the size of a fraction when you add, subtract or multiply it by another fraction, or divide it by a whole number. Does the fraction become larger or smaller?

### What if?

Ms Moore taught her class how algebra can be used to help remember how to add, subtract, multiply and divide fractions.

Adding fractions

$$\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$$

Subtracting fractions

$$\frac{a}{b} - \frac{c}{d} = \frac{ad - bc}{bd}$$

Multiplying fractions

$$\frac{a}{b} \times \frac{c}{d} = \frac{ac}{bd}$$

Dividing fractions by a whole number

$$\frac{a}{b} \div c = \frac{a}{bc}$$

Use Ms Moore's algebraic formulae to work out the answer to each of the calculations above to check your predictions.

When you've finished, turn to page 80.

