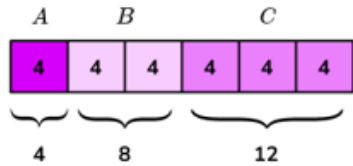


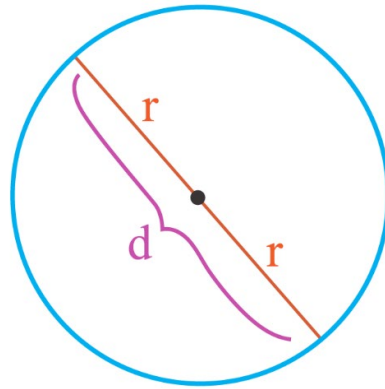
Divide 24 sweets in the ratio 1 : 2 : 3.

There are  $1 + 2 + 3 = 6$  shares altogether.

Each share is worth  $24 \div 6 = 4$  sweets.



This gives us the ratio 4:8:12.



$$C = 2\pi r$$

or

$$C = \pi d$$

**Direct proportion** is a type of proportionality relationship. For direct proportion, as one value increases, so does the other value and conversely, as one value decreases, so does the other value.

The symbol  $\propto$  represents a **proportional relationship**.

If  $y$  is **directly proportional to  $x$** , we can write this relationship as:

$$y \propto x$$

Direct proportion is useful in numerous real life situations such as exchange rates, conversion between units, and fuel prices.

### Cost of pencils

Number of pencils ( $n$ )	Cost ( $C$ )
0	0
1	20p
2	40p
3	60p
4	80p

$$C \propto n$$

$$C = 20n$$

To multiply fractions, we multiply the numerators together and multiply the denominators together.

For example,

$$\frac{2}{5} \times \frac{3}{4} = \frac{2 \times 3}{5 \times 4} = \frac{6}{20} = \frac{3}{10}$$

To divide fractions, we find the reciprocal of the dividing fraction then multiply the fractions.

For example,

$$\frac{2}{5} \div \frac{3}{4} = \frac{2}{5} \times \frac{4}{3} = \frac{2 \times 4}{5 \times 3} = \frac{8}{15}$$

### Mathematical Language:

- Ratio, equal parts, for every, divide, share, colon
- Proportion, proportional, directly proportion
- Relationship
- Double number line
- Multiplier
- Factor, common factor
- Equivalent
- Simplify, simplest form
- Scale
- Compare
- Fraction, numerator, denominator, unit fraction, quotient, reciprocal
- Radius, diameter, perimeter, circumference, area, pi ( $\pi$ )
- Right-angled triangle
- Gradient, slope, steep
- Double, triple, quadruple
- Linear
- Variable
- Axis, axes, origin, label, labelling
- Conversion
- Approximate, approximation, estimate
- Exchange rate, currency, sterling
- Orientation, similar, corresponding
- Enlargement, scale factor, object, image, not to scale

