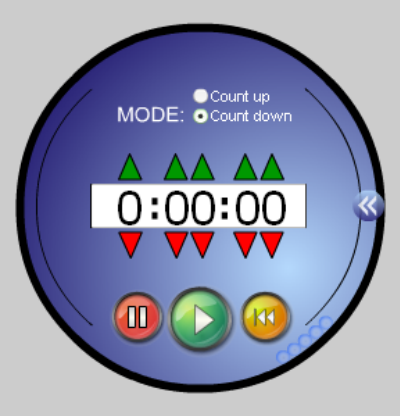
Ratio revisited

page 213 A1-A6



Delivering the Paper

Oliver is paid £5 pw plus 10p per paper.

$P = 10n + 500$

Toby is paid 15p per paper.

$P = 15n$

Frazer is paid £4.00 for delivering 50 papers.

Jess is paid £6.60 for delivering 30 papers. Find out how much she would get paid for delivering 18 papers.

£3.96

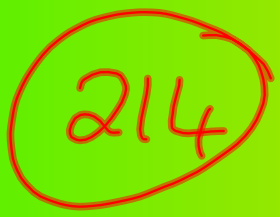
Izzy is paid £3.50 for delivering 25 papers. Find out how much she would get paid for delivering 21 papers.

£2.94

Kristina is paid £2.47 for delivering 19 papers. Find out how much she would get paid for delivering 42 papers.

£5.46

How many examples can you think of, demonstrating direct proportion?



page 215

ppt

Page 216-218

Harder Direct Proportion

(Front of your book)

The Current ***I*** in a wire is proportional to the voltage ***V***.
If ***I*** = 12 amps when ***V*** = 8 volts find:

(a) The current when the voltage is 15 volts.

(b) The voltage when the current is 7.5 amps.

Do this one now

$I \propto V$
$I = kV$
$12 = k8$
$k = \frac{12}{8} = 1\frac{1}{2}$
$I = 1\frac{1}{2}V$

a) $I = 1.5 \times 15$
$= 22.5$ amps

b) $7.5 = 1.5V$
$\frac{7.5}{1.5} = V$
$V = 5$ volts

This is similar but harder!

The value **V** of a diamond is proportional to the square of its mass **M**.
If a diamond with a mass of 5 g is valued at £100 find:
(a) The value of a diamond with a mass of 20 g.
(b) The mass of a diamond with a value of £2500.

strategy:
- **set up equation**
- **find value of *k***
- **re-write equation**

$V \propto m^2$
$V = km^2$
$100 = k \times 5^2$
$\frac{100}{25} = k = 4$
$V = 4m^2$

$m^2 = 625$
$m = 25$g

a) $V = 4 \times 20^2$
$= 4 \times 400$
$= 1600$

b) $V = 4m^2$
$2500 = 4m^2$
$\frac{2500}{4} = m^2$
$625 = m^2$

The energy of a moving body is **E**, is proportional to the square of its speed **S**.
If a body has 90 units of energy when it is moving at 3m/s, calculate:
(a) How many units of energy it has at a speed of 8 m/s
(b) The speed of a body with 810 units of energy.

page 215, 216
page 216 - 218 odd nos only

Attachments

Proportion (Direct).ppt

Proportion (Inverse).ppt