MATHEMATICAL APPLICATIONS 1

WEEK 1 NOTES & EXERCISES

PERCENTAGES

Start by watching this 1min video on Why Percentages

(http://www.bbc.co.uk/skillswise/topic/percentages)

Percentage means out of 100. In fractions it means $\frac{something}{100}$

$$42\% = \frac{42}{100}$$

$$95.3\% = \frac{93.5}{100}$$

$$61\% = \frac{61}{100}$$

This also means that

$100\% = \frac{100}{100}$ = 1 whole – which is the whole amount. So 100% of something is ALL OF IT!

$10\% = \frac{10}{100} = \frac{1}{10}$ which is one tenth (divide by 10)

$25\% = \frac{25}{100} = \frac{1}{4}$ which is one quarter (divide by 4)

$50\% = \frac{50}{100} = \frac{1}{2}$ which is one half (divide by 2)

QUESTION 1

Find these percentage amounts of the figures listed

100% of 42 = all of 42

= 42

10% of 20 = _____

= _____

50% of 50 = _____

= _____

50% of 150 = _____

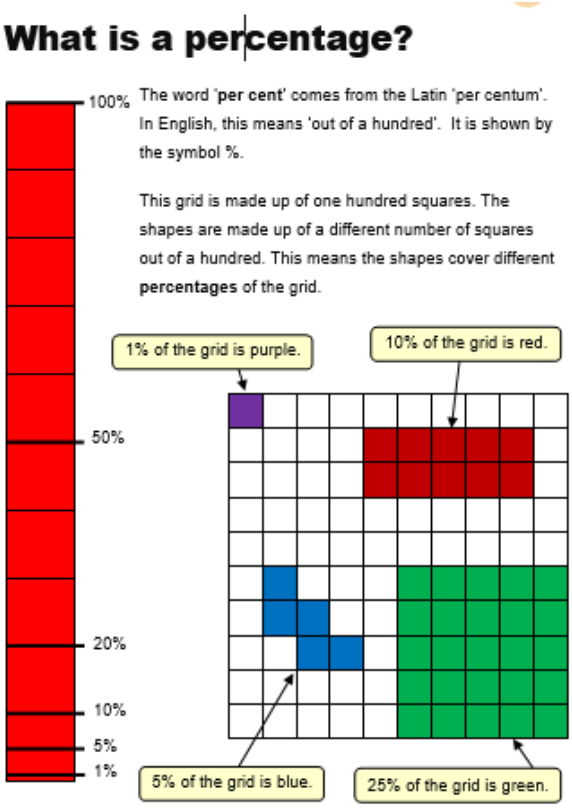
_____

25% of 72 = _____

= _____

25% of 12 = _____

= _____



Why compare Fractions and percentages? Watch the video here

http://www.bbc.co.uk/skillswise/topic/comparing-fractions

QUESTION 2

Find these percentage amounts of the figures listed (do as many as you can in your head, otherwise use a calculator).

a) 100% of 48 = _____ = _____

b) 100% of 36= _____ = _____

c) 50% of 52= half of 52 = 26

d) 50% of 38= _____ = _____

e) 50% of 112= _____ = _____

f) 50% of 1680= _____ = _____

g) 25% of 48= _____ = _____

h) 25% of 56= _____ = _____

i) 25% of 100= _____ = _____

j) 10% of 80= _____ = _____

k) 10% of 860= _____ = _____

l) 10% of 56= _____ = _____

m) 10% of 11460= _____ = _____

n) 1% of 1100= _____ = _____

o) 1% of 2500= _____ = _____

QUESTION 3

First find 10% of the following amounts, then find the amount listed. (try to do these in your head as much as possible)

AMOUNT	10%	20%	40%	80%
4420				
380				
100				
10				
940				
200				
56				

QUESTION 4

Use a calculator to find the percentages of the following

a) 13% of 279= _____ = _____

b) 18% of 492= _____ = _____

c) 99% of 990= _____ = _____

d) 54% of 260= _____ = _____

e) 12.5% of 1145.70= _____ = _____

f) 21.2% of 68203.42= _____ = _____

PERCENTAGE OFF

Percentage OFF something – Most often used with regards to money, sales and discounts

Percentage OFF something means find that percentage, and take it off the original price.

This is a two step calculation.

EXAMPLE

What is 12% **off** 480

12% 'of' \$480 = $\frac{12}{100} \times 480$

= \$57.60

So, 12% 'off' becomes \$480 - \$57.60

= \$422.40

QUESTION 5

a) A tennis racquet is on special at an 8% discount. If it normally costs \$150, how much does Maryanne save?

b) After a fire, smoke-damaged goods are sold at a mark-down of 20% to clear stock.

(i) What is the marked price of a tracksuit with an original price of $175 (remember, this is a two step process).

Step 1 Find the discount.

Step 2 Find the new price.

(ii) What would a dress that originally cost $240 sell for?

c) A clothing store offers 6% discount for cash sales. A customer who paid cash purchased the following items:

One pair of jeans $95.95

A leather belt at $29.95

Two jumpers at $45 each.

Calculate

(i) the total saving

(ii) the actual amount paid for the goods

c) A hardware store is having a 15% off sale.

(i) How much would you pay for a router worth $282?

(ii) Bob also gets 10% off the discounted price as a builder's discount. How much would he pay for the router?

(iii) The cashier didn't know how to ring up two discounts so she just gave Bob a 25% discount. Was Bob happy with this? Explain.