# Ratio

- What is a ratio?

- A ratio compares parts of one thing to parts of something else

# Ratio

- What is the ratio of women to men who work in the Police force?  There are 96,000 men and 32,000 women.

- What is the ratio of cement to sand needed to make mortar? The builder uses 1.7kg of sand and 850g of cement to make a batch of mortar.

# Simplifying Ratios

- We simplify ratios in the same way we simplify fractions:
    - look for the HCF of all the parts
    - Divide all parts by the HCF

- Example:   Simplify  28 : 40          12 : 20 : 36

# 10 mins…

*Simplify each of the following:*

1) 6 : 2

2) 8 : 4

3) 3 : 9

4) 10 : 5

5) 15 : 30

6) 7 : 14

7) 10 : 100

8) 4 : 16

9) 5 : 25

10) 13 : 26

11) 24 : 15

12) 8 : 24

13) 9 : 36

14) 9 : 42

15) 22 : 77

16) 21 : 15

17) 52 : 39

18) 52 : 48

19) 64 : 80

20) 32 : 100

# Dividing in a given ratio

- Divide 20m in the ratio 3 : 1

1. Find the total number of parts   $3 + 1 = 4$

2. Find the size of each part   $20 ÷ 4 = 5$

3. Multiply to find each share   $3 \times 5 = 15$
   $1 \times 5 = 5$

4. Write your answer as a ratio, in the same order, using units if appropriate.   15m : 5m

# Dividing in a given ratio

- Divide £60 in the ratio 2 : 3 : 7

1. Find the total number of parts    2 + 3 + 7 = 12

2. Divide the amount by this number    $60 \div 12 = 5$

3. Multiply to find each share
   
   2 x 5 = 10
   
   3 x 5 = 15
   
   7 x 5 = 35

4. Write your answer as a ratio, in the same order, using units if appropriate.    £10 : £15 : £35

# Time to try some!

1) £900 into the ratio 4:5

2) £200 into the ratio 3:5

3) £630 into the ratio 7:11

4) 2205kg into the ratio 8:13

5) 450 hours into the ratio 5:6:7

6) 550 lbs into the ratio 5:8:9

# Time to try some!

1) £900 into the ratio 4:5        £400 : £500

2) £200 into the ratio 3:5        £75 : £125

3) £630 into the ratio 7:11       £245 : £385

4) 2205kg into the ratio 8:13     840kg : 1365kg

5) 450 hours into the ratio 5:6:7   125h : 150h : 175h

6) 550 lbs into the ratio 5:8:9   125*lbs* : 200*lbs* : 225*lbs*

# Ratio

- Orange and water are mixed to make squash in the ratio 3 parts water to 1 part orange.

- If 150ml of orange is used, how much water must be included?

- If 750ml of water is used, how much orange must be included?

# Ratio

- It's found that on average, the number of consonants to vowels on a page is in the ratio 5 : 2.

- If there are 120 vowels on a page, how many consonants would you expect there to be?