

# RATIO (PPQ'S)

Share £140 in the ratio 5 : 2.

$$5+2 = 7 \text{ parts, each } 140 \div 7 = £20$$

$$5 \times 20 = £100$$

$$2 \times 20 = £40$$

[2]

An alloy is made by combining tin and copper in the ratio 3 : 5. What weights of tin and copper are there in 240 kg of the alloy?

$$3+5 = 8 \text{ parts, each } 240 \div 8 = 30 \text{ kg}$$

$$3 \times 30 = 90 \text{ kg}$$

$$5 \times 30 = 150 \text{ kg}$$

[3]

Denise, Heather and Alice share a prize of £4000 in the ratio of 4:5:7. How much does each one get?

$$4+5+7 = 16 \text{ parts, each } 4000 \div 16 = £250$$

$$\text{Denise } 4 \times 250 = £1000$$

$$\text{Heather } 5 \times 250 = £1250$$

$$\text{Alice } 7 \times 250 = £1750$$

[3]

Arwyn, Betty and Clive share out £3600 in the ratio of 4:5:9. How much do they each get?

$$4+5+9 = 18 \text{ parts } 3600 \div 18 = £200$$

$$\text{Arwyn } 4 \times 200 = £800$$

$$\text{Betty } 5 \times 200 = £1000$$

$$\text{Clive } 9 \times 200 = £1800$$

[3]

5) Daniel, Richard and Tina share £200 in the ratio of 4:5:7. Calculate how much each one receives.

$$4+5+7 = 16 \text{ parts each } 200 \div 16 = £12.50$$

$$\text{Daniel } 4 \times 12.50 = £50$$

$$\text{Richard } 5 \times 12.50 = £62.50$$

$$\text{Tina } 7 \times 12.50 = £87.50$$

[3]

6) A village raised £6000 for charity. The organisers decided to share the money between their local hospital, OXFAM and the RSPCA in the ratio of 11:8:6. How much does each charity receive?

$$11+8+6 = 25 \text{ each } 6000 \div 25 = £240$$

$$\text{Hospital } 11 \times 240 = £2640$$

$$\text{OXFAM } 8 \times 240 = £1920$$

$$\text{RSPCA } 6 \times 240 = £1440.$$

[3]

7) A model of a new hotel is made to a scale of 1:250.

(a) The length of the front wall of the model hotel is 30cm long. Calculate the real-life size of the length of this front wall in metres.

[3]

(b) The height of the real-life hotel will be 50m. What is the height, in cm, of the model of the hotel?

[2]

Jill and Alan invest some money and share any profit made in the ratio of 5:4.

(a) How much does Jill get when they make a profit of £270?

$$\text{Ans } 5+4 = 9 \text{ parts each } 270 \div 9 = £30$$

$$\text{Jill gets } 5 \times 30 = £150$$

[2]

(b) On another occasion, Alan received £136. How much profit were they sharing?

$$\text{Alan } 4 \text{ parts} = 136 \text{ so each part } 136 \div 4 = £34$$

$$\text{So } 9 \text{ parts} = 9 \times 34 = £306$$

[2]

An alloy is made by using copper and zinc in the ratio of 17:3.

(a) How much zinc is used to make 4 kg of the alloy?

$$17+3 = 20 \text{ parts each } 4 \div 20 = 0.2 \text{ kg}$$

$$\text{Zinc} = 3 \times 0.2 = 0.6 \text{ kg}$$

[2]

(b) There is only 1.5 kg of zinc available, but plenty of copper. What is the greatest amount of the alloy that can be made?

$$\text{Zinc } 3 \text{ parts} = 1.5 \text{ kg so each part } 1.5 \div 3 = 0.5 \text{ kg}$$

$$\text{So } 20 \text{ parts} = 20 \times 0.5 = 10 \text{ kg of Alloy}$$

[2]

(a) The cost of a stand season ticket last year was £200. This year it has increased by 20%. Find the cost of the stand season ticket this year.

$$0.20 \times 200 = £40 \text{ more}$$

$$\text{So now costs } £240$$

[3]

(b) Two friends, Nigel and Paul, decide to share the cost of a £100 field season ticket in the ratio 4:1.

(i) How much each should each of Nigel and Paul pay towards the cost of the ticket?

$$4+1 = 5 \text{ each part } 100 \div 5 = £20$$

$$\text{Nigel } 4 \times 20 = £80$$

$$\text{Paul } 1 \times 20 = £20$$

Nigel pays ..... Paul pays .....

[2]

(ii) In the season there are 45 matches to attend. Nigel suggests that they take it in turns to attend every other match.

Would this be a fair suggestion?

You must explain your answer giving an alternative suggestion if you decide that this would not be a fair method.

*Not fair as Nigel has paid much more.  
45 ÷ 5 = 9*

*Nigel watches 4 × 9 = 36 games*

*Paul watches 1 × 9 = 9 games.*

[2]