**Ratio Extension Problems**

1. Three boys, X, Y and Z, share some stamps in the ratio 2:3:5.

Z received 60 more stamps than X.

Find the total number of stamps shared by the three boys.

1. The sides of a triangle are in the ratio 2:3:4. The shortest side has length 5cm. Find the perimeter of the triangle.

1. A floor is covered with blue and white tiles. The ratio of blue tiles to white tiles is 3:5. Each tile is 30cm by 30cm. If the floor measures 15m by 12m, how many blue tiles are there?
2. Jill had $\frac{4}{7}$ as many marbles as Jack. When Jack gave Jill 36 marbles, both then had the same number.
	1. How many more marbles than Jill did Jack have to start with?
	2. How many marbles did Jack and Jill have between them?
3. Ben had 156 red and yellow beads in the ratio 7:6. He gave away equal numbers of red and yellow beads, after which the ratio of red to yellow beads was 7:3.
	1. Did the fraction of red beads increase, decrease or stay the same?
	2. How many beads did Ben give away?
4. Paula finished a cross country race in 20 minutes. When Paula finished, Sonia had only completed $\frac{5}{8}$ of the total distance. Sonia’s average speed was 75 metres per minute less than Paula’s. Find the length of the race and Sonia’s speed (in metres per minute).
5. Two numbers are such that their difference, their sum and their product are in the ratio 1:4:15. What are the two numbers?
6. Find $x$ if $2+x :4+x =6+x :9+x$

**Answers**

1. 200
2. 22.5cm
3. 750
4. a) 72 b) 264
5. a) increase b) 63
6. 4000m, 125m/min
7. 6 and 10
8. x = 6

Questions taken from Extension Mathematics (Gamma and Beta) – Tony Gardiner, Oxford Press.