

## Year 11 Ratio and Proportion Questions #1

1. In a class there are 15 boys and 12 girls. What is the ratio of boys to girls?
2. In a herd of cows there are 45 Friesians and 20 Jerseys. Give the ratio of the breeds.
3. Divide \$25 in the ratio 3 : 2
4. In a country school there are 3 teachers and 30 pupils. What is the teacher to pupil ratio?
5. Divide \$16.20 in the ratio 3 : 7
6. There are 204 hectares of pasture and 64 hectares of wheat on a farm. What is the ratio of hectares of wheat to hectares of pasture?
7. Share \$35.80 in the ratio 1 : 3
8. A salesman says that a new type of light bulb lasts "three times as long" as a previous sort, which used to average 8 months of use. How long should the new ones last?
9. If a making a plastic requires 1 g of catalyst for every 2 kg of monomer, how much catalyst is required to make 500 kg of plastic?
10. Find the larger portion if 72 cm is divided in the ratio 3 : 5
11. A coffee cake recipe uses 300 g of flour and 100 g of cornflour to make a 500 g cake. If a cafeteria decide that they want to make 20 kg of that coffee cake, how much flour and how much cornflour will they need?
12. John and Carol traveled 81 kilometres by car. If John drove 54 kilometres of the total distance, what was the ratio of kilometres Carol drove to that John drove?
13. Fred and Carol bought a house together for \$60,000. Fred paid \$24,000 while Carol paid the rest. If Carol made a profit of \$4,000, how much did Fred make?
14. Split \$570 in the ratio 5 : 14.
15. An orchard was bought by two brothers. The first paid \$250,000 and the other \$150,000. They agree to split the profits according to their ownership. During the first year the first brother was paid a profit of \$23,000. How much should the second be given?

## Answers Year 11 Ratio and Proportion Questions #1

1. Boys : Girls = 15 : 12 = **5 : 4**
2. Friesians to Jerseys = 45 : 20 = **9 : 4**
3.  $2 + 3 = 5$  parts. Each part is  $\$25 \div 5 = \$5$ . Split 3 : 2 = **\\$15 : \\$10**
4. Teachers to Pupils = 3 : 30 = **1 : 10**
5.  $3 + 7 = 10$  parts. Each =  $\$16.20 \div 10 = \$1.62$ . Split 3 : 7 = **\\$4.86 : \\$11.34**
6. Wheat to Pasture = 64 : 204 = **16 : 51**
7.  $1 + 3 = 4$  parts. Each part =  $\$35.80 \div 4 = \$8.95$ . Split 1 : 3 = **\\$8.95 : \\$26.85**
8.  $3 \times 8 =$  **24 months**
9. 2 kg to 500 kg means an increase of 250 $\times$ , so **250 g of catalyst**.
10.  $3 + 5 = 8$  parts. Each part =  $72 \div 8 = 9$ . 5 parts =  $5 \times 9 =$  **45 cm**
11. 500 g to 20 kg = 40  $\times$  as much. So **300 g  $\times$  40 = 12 kg flour** and  $100 \text{ g} \times 40 =$  **4 kg cornflour**.
12. Carol : John = 27 : 54 = **1 : 2**
13. Fred : Carol =  $\$24,000 : \$36,000 = 2 : 3$ . If Carol's 2 parts earn  $\$4,000$ , then Fred's 3 = **\\$6,000**
14.  $5 + 14 = 19$  parts. Each part =  $\$570 \div 19 = 30$ . Split 5 : 14 = **\\$150 : \\$420**
15. First : Second =  $\$250,000 : \$150,000 = 5 : 3$ .  $\$23,000$  is 5 parts, so each part is  $23,000 \div 5 = \$4,600$ . Second gets  $3 \times 4,600 =$  **\\$13,800**