

Foundation GCSE: Dividing in a Given Ratio

Name: _____

Class: _____

Instructions: Answer all questions. Questions are ordered from easiest (1) to hardest (20). Working out should be shown where appropriate.

1. Share 20 in the ratio 2 : 3.
2. Divide 30 kg in the ratio 1 : 4.
3. Split 45 into the ratio 4 : 5.
4. Share 56 metres in the ratio 3 : 4.
5. Divide 72 in the ratio 5 : 4.
6. Share 60 sweets in the ratio 2 : 3 : 5.
7. Divide 90 litres in the ratio 1 : 2 : 3.
8. Split 105 in the ratio 3 : 4 : 8.
9. Share 144 g in the ratio 2 : 3 : 7.
10. Divide 1.2 kg in the ratio 5 : 3 : 4.
11. A sum of money is divided between Tom and Sam in the ratio 3 : 5. If Sam gets 40, find the total amount shared.
12. Two angles in a polygon are in the ratio 4 : 5. If their sum is 180° , find the larger angle.
13. Share 150 between three people so that their shares are in the ratio 2 : 3 : 5. How much does the person with the largest share receive?
14. A prize of 540 is divided among three workers in the ratio of their years of service: 2, 3, and 4 years. How much does the worker with 3 years of service receive?
15. Divide 220 ml into three parts in the ratio $\frac{1}{2} : \frac{1}{3} : \frac{1}{6}$.
16. The angles of a quadrilateral are in the ratio 1 : 2 : 3 : 4. Find the size of the smallest angle.
17. A business makes a profit of 12,000, which is split among three partners in the ratio 2 : 3 : 7. How much more does the highest earner get than the lowest earner?
18. Gold, silver, and bronze wire weighing 315 g are cut in the ratio 4 : 3 : 2. What is the weight of the silver wire?
19. Share 500 among A , B , and C such that A gets twice as much as B , and B gets three times as much as C . Find C 's share.
20. A legacy of 10,500 is divided among four beneficiaries in the ratio 1 : 2 : 3 : 4. If the second and third beneficiaries combine their shares, how much do they have in total?

Answers & Worked Solutions

1. 8 and 12
Total parts = 5, $20 \div 5 = 4$. *Shares*: 8, 12.
2. 6 kg and 24 kg
Total parts = 5, $30 \div 5 = 6$. *Shares*: 6, 24.
3. 20 and 25
Total parts = 9, $45 \div 9 = 5$. *Shares*: 20, 25.
4. 24 m and 32 m
Total parts = 7, $56 \div 7 = 8$. *Shares*: 24, 32.
5. 40 and 32
Total parts = 9, $72 \div 9 = 8$. *Shares*: 40, 32.
6. 12, 18, 30
Total parts = 10, $60 \div 10 = 6$. *Shares*: 12, 18, 30.
7. 15, 30, 45 litres
Total parts = 6, $90 \div 6 = 15$. *Shares*: 15, 30, 45.
8. 21, 28, 56
Total parts = 15, $105 \div 15 = 7$. *Shares*: 21, 28, 56.
9. 24 g, 36 g, 84 g
Total parts = 12, $144 \div 12 = 12$. *Shares*: 24, 36, 84.
10. 500 g, 300 g, 400 g
Total parts = 12, $1200 \div 12 = 100$. *Shares*: 500, 300, 400.
11. 64
 $5 \text{ parts} = 40 \implies 1 \text{ part} = 8$. *Total parts* = 8,
- $8 \times 8 = 64$.
12. 100°
Total parts = 9, $180 \div 9 = 20$. *Larger* = $5 \times 20 = 100$.
13. 75
Total parts = 10, $150 \div 10 = 15$. *Largest* = $5 \times 15 = 75$.
14. 180
Total parts = 9, $540 \div 9 = 60$. *Worker* = $3 \times 60 = 180$.
15. 110 ml, 73.3 ml, 36.7 ml
Multiply by 6 to get whole ratio 3 : 2 : 1. *Total parts* = 6, $220 \div 6 \approx 36.67$.
16. 36°
Sum of angles in quadrilateral is 360° . *Total parts* = 10, $360 \div 10 = 36$. *Smallest* = 36.
17. 5,000
Total parts = 12, $12000 \div 12 = 1000$. *Difference* = 5 parts ($7 - 2$), $5 \times 1000 = 5000$.
18. 105 g
Total parts = 9, $315 \div 9 = 35$. *Silver* = $3 \times 35 = 105$.
19. 50
Ratio $A : B : C = 6 : 3 : 1$. *Total parts* = 10, $500 \div 10 = 50$. $C = 1 \times 50 = 50$.
20. 5,250
Total parts = 10, $10500 \div 10 = 1050$. *Combined* ($2 + 3 = 5 \text{ parts}$), $5 \times 1050 = 5250$.