

# Answer Key — Fractions of a Quantity

Year 4 Mathematics · Number and algebra · WA4MNAFR1

## Section A — Fluency (16 marks, 1 mark each)

1. 9
2. 7
3. 15
4. 12
5. 8
6. 12
7. 15
8. 4
9. 10
10. 20
11. 15
12. 14
13. 9
14. 8
15. 14
16. 9

## Section B — Core (21 marks)

1.  $\frac{3}{4}$  of 24:  $24 \div 4 = 6$ , then  $6 \times 3 = 18$  students. [2 marks working, 1 mark correct answer]
2.  $\frac{2}{5}$  of 60:  $60 \div 5 = 12$ , then  $12 \times 2 = 24$  lambs to start;  $24 - 10 = 14$  lambs remain. [2 marks first step, 2 marks second step]
3.  $\frac{1}{3}$  of 45:  $45 \div 3 = 15$  fiction books. [2 marks working, 1 mark correct answer]
4.  $\frac{3}{8}$  of 80:  $80 \div 8 = 10$ , then  $10 \times 3 = 30$  play an instrument;  $\frac{1}{3}$  of 30 = 10 play the piano. [2 marks first step, 2 marks second step]
5.  $\frac{5}{6}$  of 120:  $120 \div 6 = 20$ , then  $20 \times 5 = \$100$  spent on food. [2 marks working, 1 mark correct answer]
6.  $\frac{1}{4}$  of 72 = 18 flowers;  $\frac{1}{3}$  of 72 = 24 vegetables;  $24 - 18 = 6$  more vegetable plants. [2 marks first step, 2 marks second step]

## Section C — Reasoning (9 marks) — sample responses, award marks for valid reasoning

1. First divide the quantity by the denominator to find the value of one equal part, then multiply that value by the numerator to find how many parts you need — for  $\frac{2}{3}$  of 18:  $18 \div 3 = 6$ , then  $6 \times 2 = 12$ . [2 marks]
2. Dividing by the denominator first finds the value of one part; multiplying by 4 first (before dividing) would not correctly split the quantity into the right-sized equal parts before scaling up. [2 marks]
3. Check that the parts add up correctly: if  $\frac{1}{5}$  of 40 = 8, then  $\frac{3}{5}$  should be  $8 \times 3 = 24$ , which matches, so the answer is correct. [2 marks]
4. False. If the numerator equals the denominator (a whole), the quantity stays the same, e.g.  $\frac{4}{4}$  of 20 = 20, which is not smaller than the original. [2 marks valid example, 1 mark for correctly saying false]

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**Section D — Challenge (7 marks)**

1. If  $\frac{3}{4}$  of the number is 27, then  $\frac{1}{4}$  is 9, so the whole number is  $9 \times 4 = 36$ . [2 marks]
2. If  $\frac{2}{5}$  of the number is 18, then  $\frac{1}{5}$  is 9, so  $\frac{4}{5} = 9 \times 4 = 36$ . [2 marks]
3.  $\frac{2}{3}$  of 90 = 60 litres used, leaving 30 litres;  $\frac{1}{5}$  of 30 = 6 litres poured out, leaving  $30 - 6 = 24$  litres. [2 marks correct first step, 1 mark correct final answer]