

Answer Key — Finding Factor Pairs

Year 4 Mathematics · Number and algebra · WA4MNAFA1

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

1. 1×12 , 2×6 , 3×4
2. 1×18 , 2×9 , 3×6
3. 1×20 , 2×10 , 4×5
4. 1×24 , 2×12 , 3×8 , 4×6
5. 1×16 , 2×8 , 4×4
6. 1×28 , 2×14 , 4×7
7. 1×30 , 2×15 , 3×10 , 5×6
8. 1×36 , 2×18 , 3×12 , 4×9 , 6×6
9. 1×15 , 3×5
10. 1×21 , 3×7
11. 1×32 , 2×16 , 4×8
12. 1×40 , 2×20 , 4×10 , 5×8
13. 1×27 , 3×9
14. 1×45 , 3×15 , 5×9
15. 1×50 , 2×25 , 5×10
16. 1×48 , 2×24 , 3×16 , 4×12 , 6×8

Section B — Core (21 marks)

1. 1×24 , 2×12 , 3×8 , 4×6 — 4 factor pairs. [2 marks pairs, 1 mark count]
2. (a) Any three of: 1×36 , 2×18 , 3×12 , 4×9 , 6×6 . (b) 4 rows of 9 (or 3 rows of 12) suits a wider, shallower room better than 6 rows of 6. [2 marks part (a), 2 marks part (b)]
3. 1×40 , 2×20 , 4×10 , 5×8 . [3 marks]
4. (a) 1×45 , 3×15 , 5×9 . (b) 5 rows of 9 plants, or 9 rows of 5 plants (both have more than 3 and fewer than 10 rows). [2 marks part (a), 2 marks part (b)]
5. 1×32 , 2×16 , 4×8 . [3 marks]
6. (a) 1×48 , 2×24 , 3×16 , 4×12 , 6×8 . (b) 6 people, each receiving 8 chocolates. [2 marks part (a), 2 marks part (b)]

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

1. A factor pair is two whole numbers that multiply together to make a target number; for 20, the factor pairs are 1×20 , 2×10 and 4×5 . [2 marks]
2. Factor pairs come in two matching numbers, one smaller and one larger (except when they're equal), so once you reach the square root you've already found the smaller half of every pair; for 36 (square root 6), checking 1 to 6 finds all pairs: 1×36 , 2×18 , 3×12 , 4×9 , 6×6 . [2 marks]
3. Any whole number multiplied by 1 gives itself back, so 1 and the number itself always form a valid factor pair. [2 marks]
4. False. 36 is smaller than 50 but has more factor pairs (5 compared with 3), so the number of factor pairs a number has is not related to its size. [3 marks]

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Section D — Challenge (7 marks)

1. $3 \times 8 = 24$ and $4 \times 6 = 24$, so the number is 24. Another factor pair is 2×12 . [2 marks]
2. 31 or 37 (both are prime numbers between 30 and 40). [2 marks]
3. 18: 1×18 , 2×9 , 3×6 (3 factor pairs). 26: 1×26 , 2×13 (2 factor pairs). 18 has more factor pairs. [2 marks both lists, 1 mark comparison]