Test answers - Factors, multiples, primes, squares and cubes

Year: Year 5 · Duration: 40 minutes · /20

Answer to Question 1 (4 marks)

(a) Find the factor pairs of 28: 1 × 28, 2 × 14, 4 × 7. The factors are **1, 2, 4, 7, 14, 28**. (1 mark)

(b) Count up in nines: **9, 18, 27, 36, 45**. (1 mark)

(c) Divide: 91 ÷ 7 = 13 with no remainder (7 × 13 = 91), so **yes**, 91 is a multiple of 7. (1 mark)

(d) Pairs that multiply to 20: **1 × 20, 2 × 10 and 4 × 5**. 3 is not a factor, so there are no other pairs. (1 mark)

Answer to Question 2 (4 marks)

(a) **23, 29, 31, 37** (1 mark)

(b) 57 = 3 × 19, so it is **not prime**. (1 mark)

(c) 6^2 = **36**; 4^3 = **64**. (1 mark)

(d) **64** (8 × 8 = 64 and 4 × 4 × 4 = 64). (1 mark)

Answer to Question 3 (4 marks)

(a) Factors of 24: 1, 2, 3, 4, 6, 8, 12, 24. Factors of 36: 1, 2, 3, 4, 6, 9, 12, 18, 36. The highest common factor is **12**. (1 mark)

(b) Multiples of 6: 6, 12, 18, 24, 30. Multiples of 10: 10, 20, 30. The lowest common multiple is **30**. (1 mark)

(c) 84 = 2 × 42 = 2 × 2 × 21 = **2 × 2 × 3 × 7**. (2 marks)

Answer to Question 4 (3 marks)

(a) 4 + 5 + 7 + 2 = 18, which is a multiple of 9, so **yes**. (1 mark)

(b) For example **120** (ends in 0 and 1 + 2 + 0 = 3). (1 mark)

(c) A number ending in 4 is even and bigger than 2, so it has the factor 2 and is not prime. (1 mark)

Answer to Question 5 (5 marks)

(a) 72 = 8 × 9 = **2 × 2 × 2 × 3 × 3** = $2^3 \times 3^2$. (1 mark)

(b) 72 ÷ 9 = **8 books**. (1 mark)

(c) The factors of 72 between 4 and 10 are **6, 8 and 9**. (2 marks)

(d) $8^2 = 64$ and $9^2 = 81$, so 72 is not a square number: **she is wrong**. (1 mark)