

Grade 4 · Factors, Multiples, Primes and Composites · Test Answer Key

Common Core 4.OA.B.4 · mathovore.fr

This answer key shows a full worked solution and a scoring guide for every question on the factors and multiples test. The total is 20 points. Award partial credit as described in each scoring note.

Grade 4 Common Core: 4.OA.B.4

Question 1: Factor pairs of 48 (2 points)

(a) Test 1 to 6: 1×48 , 2×24 , 3×16 , 4×12 , 6×8 .

(b) $9 \times 5 = 45$ and $9 \times 6 = 54$, so 48 is not a multiple of 9. No.

(a) 1×48 , 2×24 , 3×16 , 4×12 , 6×8 . (b) No.

Scoring: 1 point for all five pairs (lose it if one is missing or wrong); 1 point for "no" with a correct reason.

Question 2: Multiples of 7 (2 points)

(a) 7, 14, 21, 28, 35, 42.

(b) $7 \times 13 = 91$, so 91 is a multiple of 7.

(a) 7, 14, 21, 28, 35, 42. (b) Yes.

Scoring: 1 point for all six multiples; 1 point for yes with a correct multiplication or division.

Question 3: Prime or composite (2 points)

(a) 23 has only the pair 1×23 , so it is prime. $3 \times 13 = 39$, so 39 is composite.

(b) Every even number larger than 2 is also divisible by 2, so it has at least three factors: 1, 2, and itself.

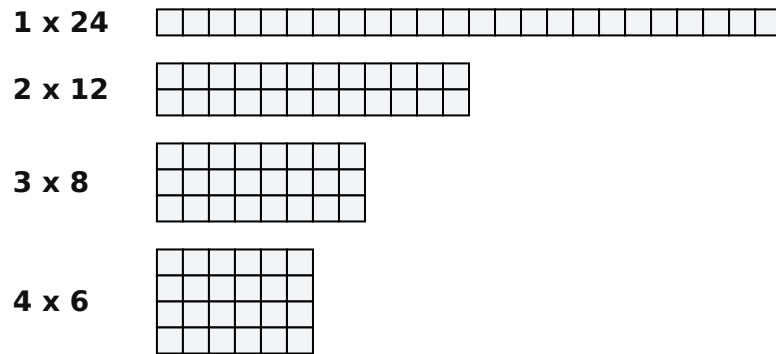
(a) 23 prime, 39 composite. (b) Larger even numbers have 2 as an extra factor.

Scoring: 1 point for both classifications; 1 point for a reason that every larger even number has the factor 2.

Question 4: Array of dots (3 points)

(a) 3 rows of 8 dots: $3 \times 8 = 24$.

(b) Test 1, 2, 4, 5: the pairs 1×24 , 2×12 , 4×6 work.



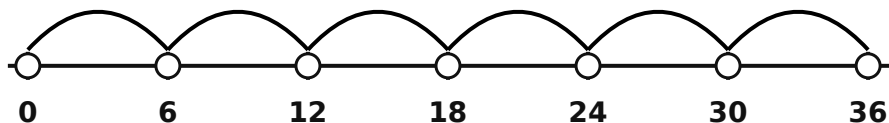
All the factor pairs of 24.

(a) $3 \times 8 = 24$. **(b)** 1×24 , 2×12 , 4×6 .

Scoring: 1 point for (a). In (b), 1 point for two correct pairs and 2 points for all three.

Question 5: Number line multiples (2 points)

(a) The hops are 6 each: $18 + 6 = 24$, $24 + 6 = 30$, $30 + 6 = 36$.



The completed number line.

(b) $6 \times 9 = 54$, so 54 is a multiple of 6.

(a) 24, 30, 36. (b) Yes.

Scoring: 1 point for all three numbers; 1 point for yes with a correct reason.

Question 6: Find the primes (2 points)

$3 \times 17 = 51$, $3 \times 19 = 57$, and $7 \times 9 = 63$ are composite. The numbers 53, 59, 61, and 67 have no factors except 1 and themselves.

53, 59, 61, 67

Scoring: 2 points for exactly four correct primes; 1 point for three correct primes with no composite circled, or all four with one extra circled.

Question 7: Mystery number (2 points)

Multiples of 9 between 60 and 80: 63, 72. The number 72 is even, and 63 is odd.

63

Scoring: 1 point for listing the multiples 63 and 72; 1 point for the correct number 63.

Question 8: Rows of students (3 points)

(a) 5 rows of 8 students shows $5 \times 8 = 40$.

(b) Test 1, 2, 3, 4, 5: 3 does not divide 40. The pairs are 1×40 , 2×20 , 4×10 .

(a) 5×8 . (b) 1×40 , 2×20 , 4×10 .

Scoring: 1 point for (a). In (b), 1 point for two correct pairs and 2 points for all three.

Question 9: Saving each week (2 points)

(a) $8 \times 7 = 56$, so he has \$56.

(b) The multiples of 8 near 90 are $8 \times 11 = 88$ and $8 \times 12 = 96$. So 90 is not a multiple of 8.

(a) \$56. (b) No.

Scoring: 1 point for \$56; 1 point for no with a correct reason.

Total
20 points