

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

Common Core 4.OA.B.4 · mathovore.fr

This answer key gives a full worked solution for every problem on the factors and multiples worksheet. Compare your lists with the ones here, and check any factor pair by multiplying the two numbers together.

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

Problem 1: First eight multiples of 3

Skip count by 3: 3, 6, 9, 12, 15, 18, 21, 24.

3, 6, 9, 12, 15, 18, 21, 24

Problem 2: Rectangles of 18 squares

The sentences are $1 \times 18 = 18$, $2 \times 9 = 18$, and $3 \times 6 = 18$.

Read the factors from the pairs and put them in order.

Factors of 18: 1, 2, 3, 6, 9, 18

Problem 3: Is 7 a factor?

$7 \times 6 = 42$, so 7 divides 42 exactly.

$7 \times 6 = 42$ and $7 \times 7 = 49$, so 45 falls between two multiples of 7.

Yes for 42; no for 45.

Problem 4: Factors of 20

Pairs: 1×20 , 2×10 , 4×5 .

1, 2, 4, 5, 10, 20

Problem 5: Multiples of 6 below 40

Skip count by 6 and stop before 40: 6, 12, 18, 24, 30, 36. The next one, 42, is too big.

6,12,18,24,30,36

Problem 6: Multiple of 8?

$8 \times 7 = 56$, so 56 is a multiple of 8.

The multiples of 8 near 58 are 56 and 64, so 58 is not one.

56: yes. 58: no.

Problem 7: Factor pairs of 28

Test 1, 2, 3, 4, 5. The numbers 1, 2, and 4 divide 28. After 4 the partner is 7, and 5 does not work, so stop.

1×28 , 2×14 , 4×7

Problem 8: Prime or composite?

13 has only the pair 1×13 , so it is prime.

$3 \times 7 = 21$, so 21 is composite.

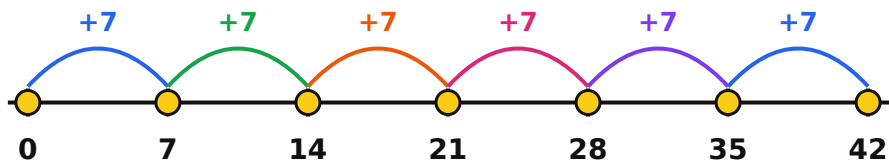
29 has only the pair 1×29 , so it is prime.

$3 \times 17 = 51$, so 51 is composite.

13 prime, 21 composite, 29 prime, 51 composite.

Problem 9: Hops on a number line

Each hop adds 7: 0,7,14,21,28. Then $28 + 7 = 35$ and $35 + 7 = 42$.



The completed number line.

The next mark is $42 + 7 = 49$, which is 7×7 .

Rule: add 7. Missing: 35 and 42. Yes, 49 comes next.

Problem 10: Multiples of 9 on a chart

Skip count by 9: 9,18,27,36,45,54,63,72,81,90,99.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

The multiples of 9 form a diagonal pattern.

The digits of each number add to 9 (for example, $2+7=9$), and $9+9=18$ for 99, which is also a multiple of 9.

11 multiples; the digits add to 9 or 18.

Problem 11: Factors of 45

Pairs: 1×45 , 3×15 , 5×9 .

1,3,5,9,15,45

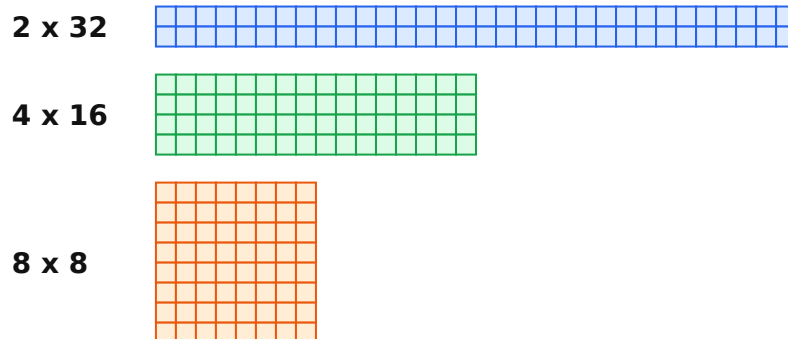
Problem 12: Multiples of 4

$4 \times 6 = 24$, $4 \times 12 = 48$, $4 \times 13 = 52$, $4 \times 15 = 60$. The number 35 is not a multiple ($4 \times 8 = 32$ and $4 \times 9 = 36$).

24,48,52,60

Problem 13: Factor pairs of 64

Test 1, 2, 4, 8. The numbers 3, 5, 6, and 7 do not divide 64. At 8 the partner is 8, so stop.



Three of the four rectangles for 64 (the 1×64 strip is left out).

1×64 , 2×32 , 4×16 , 8×8 ; the pair 8×8 uses 8 twice.

Problem 14: Missing factor

Skip count by 9: 9, 18, 27, 36, 45, 54, 63, 72. That is 8 jumps, so $9 \times 8 = 72$.

The missing number is 8, and 72 is a multiple of 9.

Problem 15: Sort the numbers

11 and 37 have only 1 and themselves as factors.

$3 \times 9 = 27$, $7 \times 7 = 49$, $3 \times 19 = 57$, $7 \times 13 = 91$.

Prime: 11, 37. **Composite:** 27, 49, 57, 91.

Problem 16: Arrays and primes

Five dots can only be arranged as 1 row of 5, so the only factor pair is 1×5 . That gives exactly two factors, 1 and 5.

Six dots make a 1 by 6 array and also a 2 by 3 array. The factors are 1, 2, 3, 6, which is more than two.

5 is prime (2 factors); 6 is composite (4 factors).

Problem 17: Mystery number

Multiples of 7: 42, 49, 56, 63. Only 56 is between 50 and 60.

Problem 18: Setting up chairs

Test 1, 2, 3, 4, 5. The numbers 1, 2, 3, and 5 divide 30. The pairs are 1×30 , 2×15 , 3×10 , 5×6 .

Each pair gives one arrangement, and 4 does not divide 30.

4 arrangements: 1 by 30, 2 by 15, 3 by 10, and 5 by 6.

Problem 19: Cookie boxes

The factors of 48 are 1,2,3,4,6,8,12,16,24,48. The ones from 4 to 12 are 4,6,8,12.

$48 \div 4 = 12$, $48 \div 6 = 8$, $48 \div 8 = 6$, $48 \div 12 = 4$.

4, 6, 8, or 12 cookies per box, using 12, 8, 6, or 4 boxes.

Problem 20: Saving in the jar

The amounts are multiples of 6: \$6,\$12,\$18,\$24,\$30,\$36,\$42,\$48,\$54,\$60.

50 is between \$48 and \$54, so it is not a multiple of 6. And $6 \times 9 = 54$.

Not \$50. Yes, \$54, after week 9.

Problem 21: Priya's claim

Try 3: the digits add to $5 + 1 = 6$, a multiple of 3. $3 \times 17 = 51$.

So 51 has the factors 1,3,17,51, which is more than two.

No. 51 is composite because $3 \times 17 = 51$.

Problem 22: Sticker pages

The factors of 72 are 1,2,3,4,6,8,9,12,18,24,36,72. Those from 2 to 10 are 2,3,4,6,8,9. The number 5 and the number 7 do not divide 72.

$72 \div 2 = 36$, $72 \div 3 = 24$, $72 \div 4 = 18$, $72 \div 6 = 12$, $72 \div 8 = 9$, $72 \div 9 = 8$.

2, 3, 4, 6, 8, or 9 stickers per page, using 36, 24, 18, 12, 9, or 8 pages.