

Grade 5 Mathematics

Factors, Multiples & Prime Numbers

Complete Worksheet Pack

Factor pairs • Common factors • Multiples • Primes • Divisibility • Reasoning

Worksheet 1 – Factors & Factor Pairs

Grade 5 Mathematics

A. Find the Factors

1. List all the factors of 72.

2. List all the factors of 96.

3. List all the factors of 120.

4. Write all the factor pairs of 144.

5. Which numbers from 30, 42, 55, 63 and 75 have exactly 6 factors?

B. Reasoning

1. A number has factor pairs $(1, n)$, $(2, n/2)$, $(4, n/4)$ and $(8, n/8)$. What could n be?

2. Find a number between 40 and 60 that has exactly 3 factor pairs.

3. Two numbers have common factors 1, 2 and 4, but no other common factors. Give one possible pair.

Worksheet 2 – Multiples & Common Multiples

Grade 5 Mathematics

A. Multiples

1. Write the first 8 multiples of 12.

2. Write the first 6 multiples of 18.

3. Write the first 5 multiples of 25.

4. Find the first 4 common multiples of 6 and 8.

5. Find the first 3 common multiples of 9 and 12.

B. Reasoning with Multiples

1. Two bells ring every 12 minutes and 18 minutes. If they ring together at 9:00, when will they next ring together?

2. Find the smallest number greater than 100 that is a multiple of both 8 and 15.

3. Is 360 a multiple of both 12 and 15? Explain without doing long calculations.

Worksheet 3 – Prime & Composite Numbers

Grade 5 Mathematics

A. Classify

1. Classify each as prime or composite: 29, 51, 67, 91, 97.

2. Write all the prime numbers between 40 and 70.

3. Which numbers from 21, 27, 31, 39, 43 and 51 are prime?

4. Give a composite number between 50 and 60 that has exactly 4 factors.

B. Prime Number Reasoning

1. A number is greater than 20 and less than 30. It is prime and its digits add to 7. What is the number?

2. Can an even number greater than 2 be prime? Explain.

3. Find two prime numbers whose sum is 40.

Worksheet 4 – Divisibility Rules

Grade 5 Mathematics

A. Use the Rules

1. Which of these numbers are divisible by 2: 348, 475, 1,206, 2,715?

2. Which are divisible by 3: 426, 517, 729, 1,004?

3. Which are divisible by 5: 630, 748, 1,235, 2,418?

4. Which are divisible by 9: 729, 1,152, 2,025, 3,142?

5. Which are divisible by 10: 4,500, 4,505, 8,230, 9,999?

B. Find the Missing Digit

1. 45_ is divisible by 3. Give all possible digits.

2. 72_ is divisible by 5. Give all possible digits.

3. 6_24 is divisible by 9. Find the missing digit.

4. 3_50 is divisible by 2, 5 and 10. What digits could replace the blank?

Worksheet 5 – Factors, Multiples & Primes Challenge

Grade 5 Mathematics

A. Think Carefully

1. I am a number between 80 and 100. I am divisible by 6 and 8. What number am I?

2. A number has exactly 4 factors, and two of its factors are 1 and 11. What is the number?

3. Find the smallest number that is a multiple of 12, 15 and 20.

4. Find the greatest common factor of 36 and 48.

5. Find a number less than 100 that is both a multiple of 7 and a multiple of 9.

B. True or False? Explain

1. Every multiple of a prime number is composite.

2. 1 is a prime number.

3. 36 has more factors than 24.

4. If a number is divisible by 10, it must also be divisible by 5.

Answer Key – Worksheet 1

Grade 5 Mathematics

1. 1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72.
2. 1, 2, 3, 4, 6, 8, 12, 16, 24, 32, 48, 96.
3. 1, 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 24, 30, 40, 60, 120.
4. (1,144), (2,72), (3,48), (4,36), (6,24), (8,18), (9,16), (12,12).
5. 63 and 75 each have exactly 6 factors.
6. Example: 64 (factor pairs 1×64 , 2×32 , 4×16 , 8×8).
7. 49 (1×49 , 7×7).
8. Example: 12 and 20; common factors are 1, 2 and 4.

Answer Key – Worksheet 2

Grade 5 Mathematics

1. 12, 24, 36, 48, 60, 72, 84, 96.
2. 18, 36, 54, 72, 90, 108.
3. 25, 50, 75, 100, 125.
4. 24, 48, 72, 96.
5. 36, 72, 108.
6. 9:36 (36 is the first common multiple after 9:00).
7. 120.
8. Yes. $360 \div 12 = 30$ and $360 \div 15 = 24$.

Answer Key – Worksheet 3

Grade 5 Mathematics

1. 29 prime; 51 composite; 67 prime; 91 composite; 97 prime.
2. 41, 43, 47, 53, 59, 61, 67.
3. 31 and 43 are prime.
4. 55 has exactly 4 factors: 1, 5, 11, 55.
5. 25 ($2 + 5 = 7$).
6. No. Every even number greater than 2 has 2 as a factor, so it is composite.
7. Examples: $3 + 37$, $11 + 29$, $17 + 23$.

Answer Key – Worksheet 4

Grade 5 Mathematics

1. Divisible by 2: 348 and 1,206.
2. Divisible by 3: 426 and 729.
3. Divisible by 5: 630 and 1,235.
4. Divisible by 9: 729 and 2,025.
5. Divisible by 10: 4,500 and 8,230.
6. 45_: digits can be 0, 3, 6 or 9.
7. 72_: digits can be 0 or 5.
8. 6_24: digit = 6 because $6+6+2+4 = 18$.
9. 3_50: any even digit 0, 2, 4, 6 or 8.

Answer Key – Worksheet 5

Grade 5 Mathematics

1. 96 (it is divisible by both 6 and 8).
2. 121 has 3 factors, so the clues are inconsistent; no number with exactly 4 factors can have 1 and 11 as its only stated factors. A valid example would be 33 (1, 3, 11, 33).
3. 60.
4. 12.
5. 63.
6. False. For example, 2 is prime but is not composite.
7. False. 1 is neither prime nor composite.
8. True. 36 has 9 factors; 24 has 8 factors.
9. True.