📰 GRADE 5, 6 & 7 WORKSHEET

Topic: PRIME FACTORS

Name:_____

A. Multiple Choice Questions

Choose the correct answer (A–E).

1. Which of the following is a prime number?

   A. 21   B. 17   C. 27   D. 39   E. 51

2. The prime factors of 12 are:

   A. 2 and 6   B. 3 and 4   C. 2 and 3   D. 1 and 12   E. 6 and 12

3. Which of the following numbers has $3^2 \times 5$ as its prime factorization?

   A. 30   B. 45   C. 90   D. 225   E. 150

4. The prime factorisation of 36 is:

   A. 2×18 B. $2^2 \times 3^2$ C. 6×6 D. 4×9 E. $3^3 \times 2$

5. Which of the following numbers is **not** a prime number?

   A. 2   B. 11   C. 17   D. 19   E. 21

6. Prime factorization of 40 is:

   A. 4×10 B. 5×8 C. $2^3 \times 5$ D. 2×20 E. 10×4

7. Which number has prime factors 2, 3, and 7?

   A. 21   B. 28   C. 42   D. 63   E. 72

8. Which of these is a **composite number**?

   A. 2   B. 5   C. 11   D. 17   E. 20

9. Prime factorisation of 50 is:

   A. $5^2 \times 2$ B. 10×5 C. 25×2 D. 2×5 E. 2×10

10. Which prime number is the smallest?

   A. 1   B. 2   C. 3   D. 4   E. 5

B. Short Answer Questions

11. Find the prime factors of **45**.

12. Write the prime factorization of **82**.

13. List all the prime factors of **84**.

14. Express **120** as a product of prime factors.

15. Write the prime factorization of **56**.

C. Factor Tree Questions

Draw factor trees and write your answers in prime factor form.

16. 48

17. 90

18. 32

19. 120

20. 96

D. Word Problems

21. A teacher wants to divide **60 pencils** equally among students so that **each student receives only prime-numbered quantities**. What are the possible quantities each student can get?

22. A number has prime factors **2, 2, 3, and 5**. What is the number?

23. Two bells ring every **12 minutes** and **18 minutes**.

    Their ringing times can be written in prime factors as:
    - $12 = 2^2 \times 3$
    - $18 = 2 \times 3^2$

        What is the smallest time (in minutes) when they will ring together?

24. A farmer packs **72 oranges** into bags.

    If the number of oranges in each bag must be a **prime factor** of 72, what are the possible numbers per bag?

25. A number written in prime factor form is $2^3 \times 7$.

    What is the number?

E. Challenge Questions (Higher Order Thinking)

26. Find a two-digit number whose prime factors are **3 and 7**.

27. A number has exactly **three prime factors**, and all are the same. If the number is less than 100, what is the number?

28. Write all prime numbers between **50 and 80**.

29. A number is divisible by **2, 3, and 5**. What is the smallest possible number?

30. If $2^4 \times 3^2 \times 5 = N$, find the value of **N**.