Worksheet: Factoring Expressions

Factoring is the opposite of expanding. Instead of multiplying to remove parentheses, you **find the greatest common factor (GCF)** and write the expression as a product.

Steps for Factoring

1. Find the **Greatest Common Factor (GCF)** of all the terms.
2. Divide each term by the GCF.
3. Write the GCF outside the parentheses.
4. Check your answer by distributing.

Example 1
Factor:
$6x + 18$
The GCF of **6** and **18** is **6**.
Divide each term by 6:
$6x \div 6 = x$
$18 \div 6 = 3$
Answer:
$6(x + 3)$

Example 2
Factor:
$15y - 20$
The GCF is **5**.
Divide:
$15y \div 5 = 3y$
$20 \div 5 = 4$
Answer:
$5(3y - 4)$

Example 3
Factor:
$8a + 12$
The GCF is **4**.
Divide:
$8a \div 4 = 2a$
$12 \div 4 = 3$
Answer:
$4(2a + 3)$

Example 4
Factor:
$18m - 30$
The GCF is **6**.
Divide:
$18m \div 6 = 3m$
$30 \div 6 = 5$
Answer:
$6(3m - 5)$

Part A – Find the Greatest Common Factor (GCF) - Find the GCF of each pair.

1. 8 and 12 _____
2. 15 and 20 _____
3. 18 and 24 _____
4. 21 and 35 _____
5. 16 and 40 _____
6. 12 and 30 _____

Part B – Factor the Expressions - Factor each expression using the GCF.

7. $8x + 16$ = _____
8. $12y + 18$ = _____
9. $15a - 25$ = _____
10. $14b + 28$ = _____
11. $20c - 30$ = _____
12. $9m + 27$ = _____
13. $16n - 24$ = _____
14. $18p + 42$ = _____
15. $30q - 45$ = _____
16. $24r + 36$ = _____

Part C – Factor Completely

17. $6x + 24$ = _____
18. $14y - 56$ = _____
19. $35m + 10$ = _____
20. $27a - 18$ = _____
21. $40b + 16$ = _____
22. $32c - 48$ = _____
23. $45d + 30$ = _____
24. $54e - 36$ = _____
25. $63f + 21$ = _____
26. $28g - 42$ = _____

LIVEWORKSHEETS