

Directions: Completely factor each expression below. Use a separate sheet of paper to show your work and attach that sheet to this page.

Part 1: Factor with the GCF.

1) $5x^5 - 30x^2$

2) $-18v^2 - 9v$

3) $32x^2y^4 - 24xy$

4) $90a^9 + 27a^2b^3$

5) $2x^2y + 8xy - 6y$

6) $14ab^3 + 21ab^2 + 7ab$

Part 2: Factor by Difference of Squares, Difference of Cubes, or Sum of Cubes (look for a GCF first).

7) $64a^3 - 125$

8) $144a^2 - 9b^2$

9) $18z^7 - 50z^5$

10) $8x^3 + 27y^3$

11) $2 - 16x^3$

12) $1 - 81t^4$

13) $81c^5 - cd^4$

14) $3x^2 - 75$

Part 3: Factor by Grouping (look for a GCF first).

15) $7a^3 + 2a^2 + 42a + 12$

16) $5b^3 + 10b^2 - 7b - 14$

17) $8m^3 + 16m^2 + 7m + 14$

18) $16a^3 - 6a^2 - 8a + 3$

Part 4: Factor with X-Box (look for a GCF first).

19) $b^2 - 19b + 90$

20) $b^2 + 2b - 24$

21) $x^2 + 13x + 30$

22) $p^2 - 3p - 70$

23) $4k^2 + 20k - 96$

24) $6n^2 + 42n - 48$

25) $4x^2 + 12x - 40$

26) $2b^2 + 17b + 21$

27) $5a^2 - a - 18$

28) $3x^3 - 5x^2 + 2x$

29) $9y^2 - 5y - 10$

30) $10m^2 + 89m - 9$