

Algebra 1CC
Assignment #66d
Factor by Grouping
***Optional**

Show all work in your notebook.

Factor by grouping:

1. $5a^3 - a^2 - 5a + 1$

* 2. $x^3 - 3x^2 + 2x - 6$

3. $x^3 + 4x^2 - 9x - 36$

* 4. $x^3 + 2x^2 - 25x - 50$

5. $a^3 - 3a^2 + 3a - 9$

* 6. $2x^3 - 3x^2 - 4x + 6$

7. $y^3 + y^2 - 5y - 5$

* 8. $x^2 + 7x + x + 7$

9. $a^3 + 3a^2 - a - 3$

10. $4x^3 - 10x^2 + 6x$

11. $2x^3 + 13x^2 + 15x$

Factor:

* 12. $3a^2 + 9b^2$

13. $4a^2bc - 12ab^2c$

* 14. $16ab^3 + 12a^2b^2c$

15. $81a^2 - 49b^2$

Factor completely:

* 16. $2x^2 + 8x + 6$

17. $5x^3 - 15x^2 - 20x$

* 18. $c^4 - 16$

19. $2x^2 - 18x + 36$

Answers

1. $(5a - 1)(a - 1)(a + 1)$

2. $(x - 3)(x^2 + 2)$

3. $(x - 3)(x + 3)(x + 4)$

4. $(x + 2)(x - 5)(x + 5)$

5. $(a - 3)(a^2 + 3)$

6. $(2x - 3)(x^2 - 2)$

7. $(y + 1)(y^2 - 5)$

8. $(x + 1)(x + 7)$

9. $(a - 1)(a + 1)(a + 3)$

10. $2x(2x + 1)(2x - 3)$

11. $x(x + 5)(2x + 3)$

12. $3(a^2 + 3b^2)$

13. $4abc(a - 3b)$

14. $4ab^2(4b + 3ac)$

15. $(9a - 7b)(9a + 7b)$

16. $2(x + 1)(x + 3)$

17. $5x(x - 4)(x + 1)$

18. $(c - 2)(c + 2)(c^2 + 4)$

19. $2(x - 3)(x - 6)$