

FACTORING PRACTICE

To factor $x^2 + bx + c$

1. Arrange the terms in descending order.
2. Factor out any greatest common factors.
3. List the combinations of 2 numbers that multiply to c and add to b . Make sure to check for negatives to figure out which combination is the right one.
4. Each number in that combination is part of a factor. Put your answer in the form $(x+n)(x+m)$, where n and m are your 2 numbers.
5. Remember you can always check your answer by multiplying.

Difference of squares

Use this when you want to factor something that looks like $x^2 - a^2$, where a^2 is a number that is a perfect square.

$$x^2 - a^2 = (x - a)(x + a)$$

Factor

- | | |
|-----------------------|--------------------------|
| 1. $x^2 + 13x + 36$ | 19. $5x^2 + 40x + 80$ |
| 2. $x^2 + 9x + 18$ | 20. $x^3 - 6x^2 - 16x$ |
| 3. $x^2 + 10x + 21$ | 21. $2x^3 - 16x^2 + 14x$ |
| 4. $x^2 - 4x - 12$ | 22. $x^3 - 16x$ |
| 5. $x^2 - 36$ | 23. $2x^3 - 18x$ |
| 6. $2x^2 + 14x + 20$ | 24. $3x^2 - 24x + 36$ |
| 7. $x^2 - 7 - 18$ | 25. $2x^3y - 128xy$ |
| 8. $x^2 - 81$ | |
| 9. $x^2 - 11x + 18$ | |
| 10. $x^2 + 11x - 12$ | |
| 11. $x^2 - 2x - 8$ | |
| 12. $x^2 - 25$ | |
| 13. $x^2 - 7x + 12$ | |
| 14. $x^2 - 2x - 24$ | |
| 15. $2x^2 + 22 + 48$ | |
| 16. $3x^2 - 27x + 54$ | |
| 17. $4x^2 + 8x - 140$ | |
| 18. $x^2 - 49$ | |