

We have learned how to factor trinomials with leading coefficient 1 using the X-box method. In some cases, when the leading coefficient was not 1, we were able to factor out a common factor first and then continue with the X-box method. In this lesson, we will learn how to factor a trinomial even when the leading coefficient is not 1, and cannot be factored out! All we really need to do is continue using the X-box method.

Use the X-box method to factor completely:

1. $6x^2 - 5x - 4$

2. $2x^2 + 5x - 7$

3. $6x^2 + 11x - 10$

4. $5x^2 + 19x - 4$

5. $3x^2 + x - 10$

6. $6x^2 + 5x - 4$

7. $5x^2 + 19x + 12$

8. $6x^2 + 37x + 6$

Use the X-box method to factor completely. Remember to look for common factors first!

9. $-2n^2 - 5n - 2$

10. $8m^2 - 34m + 8$

11. $-12x^2 + 12x + 6$

12. $10y^3 + 15y^2 + 5y$

13. $-2x^3 + 15x^2 - 18x$

14. $12y^4 - 12y^3 + 3y^2$

15. The area of a rectangular granite countertop is $12x^2 + 10x - 12$. If the width of the countertop is $2x + 3$, what is the length of the countertop?

16. The area of a rectangular book cover is $4x^2 - 6x - 40$. If the width of the book cover is $2x + 5$, what is the length of the book cover?