

STEPS FOR FACTORING

1. Factor out the Greatest Common Factor if possible
2. Look for a Special Case (Difference of Squares)
3. Factor
4. Check your answer by multiplying

REMEMBER:

We don't like the leading term to be negative!

$$-x^2 + 7x - 12$$

Just factor out the negative!

$$-(x^2 - 7x + 12)$$

And then factor ☺

$$-(x - 3)(x - 4)$$

Answer the following. Justify your answer by showing work!

1. Is $(7x - 2)(3x + 5)$ the factored form of $21x^2 - 29x - 3$?
2. Is $4y(y - 9)$ the factored form of $4y^2 - 36y$?

Factor the following if possible. Check your answer by multiplying!

3. $t^2 - 9t - 36$

4. $m^2 - 4$

5. $4x^2 - 8x$

6. $5p^2 + 14p - 3$

7. $-16n^2 - 20n + 6$

8. $d^3 - d^2 - 20d$

Solve the following by factoring.

9. $x^2 - 7x - 30 = 0$

10. $0 = 2h^2 + 14h + 24$

Solve the following by factoring.

11. $3g^2 - 10g = 8$

12. $0 = 16b^3 - 36b$

13. $x^2 + 8x + 2 = -10$

14. $5m^2 + 20m = 0$

15. The average monthly temperature of an Alaskan town is modeled by the equation $T(m) = -m^2 + 13m - 22$ where m stands for month (January = 1, Feb = 2, March = 3, etc...) and T stands for Temperature in Fahrenheit.

a. Find $T(5)$. Use a sentence to explain its meaning in the context of this problem.

b. What month(s) is the average temperature zero?

16. The area of the rectangle shown below is 24 feet^2 . Find the perimeter of the rectangle.

