FACTOR OUT THE GREATEST COMMON FACTOR

Factor Completely:
1. \(5x + 10 = 5(x+2)\)
   CHECK BY MULTIPLYING: \(5(x+2) = 5x + 10\)
2. \(21 - 3y = 3(7-y)\)
3. \(6ab + 2b = 2b(3a+1)\)
   \(a\) and \(b\) are common factors of both terms, the GCF = \(2b\)
4. \(12x^2 - 4x + 8 = 4(3x^2 - x + 2)\)
5. \(11x^2 + 22x = 11x(x + 2)\)
6. \(3x^3 - 4x = x(3x^2 - 4)\)
7. \(10x^2y + 4xy = 2xy(5x + 2)\)
8. \(20x^3 + 15x^2 = 5x^3(4x + 3)\)

IF THE LEADING COEFFICIENT IS NEGATIVE
9. \(-9x^2 - 3x = -3x(3x + 1)\)
   FACTOR OUT THE NEGATIVE GCF
   CHECK BY MULTIPLYING:
   \(-3x(3x + 1) = -9x^2 - 3x\)
10. \(48x^4y^3z^2 - 60x^2y^2z = 12x^2y^3z(4x^2 - 5)\)
11. \(10y^3 - 14y^2 + 6y = 2y(5y^2 - 7y + 3)\)
12. \(20a^3b + 18a^2c - 6ab = 2a(10a^2b + 9ac - 3b)\)

Factor a binomial from a polynomial
13. \(3b + ab = b(3+a)\)
   \(b\) is common to both terms
14. \(3(x+4) + a(x+4) = (x+4)(3+a)\)
   \((x+4)\) is common to both terms
15. \(5x(x-2) + 4(x-2) = (x-2)(5x+4)\)
16. \(9(y+5) - 2x(y+5) = (y+5)(9-2x)\)
17. \(x(5x-1) - 3(5x-1) = (5x-1)(x-3)\)
18. \(6x(x-2) + (x-2) = (x-2)(6x+1)\)