

Factor each polynomial and solve

1. $x^2 - 16x + 15 = 0$

2. $14x^3 = 2x$

3. $2x^2 - x - 28 = 0$

4. $6x^3 + 15x^2 - 9x = 0$

5. $2x^2 + 16x = 40$

6. $9x^2 = 4$

$$7. 2x^2 - 98 = 0$$

$$8. 3x^2y - 6xy - 45y = 0$$

$$9. 2x^2 = -8x + 42$$

$$10. 6bx^2 + 7bx + 2b = 0$$

$$11. 4x^2 + 6x - 4 = 0$$

$$12. 12x^2 - 2x = 30$$

Factor each polynomial and solve

1. $x^2 - 16x + 15 = 0$

$$(x-15)(x-1) = 0$$

$$x = 1, x = 15$$

2. $14x^3 = 2x$

$$14x^3 - 2x = 0$$

$$2x(7x^2 - 1) = 0$$

$$7x^2 - 1 = 0$$

$$7x^2 = 1$$

$$x^2 = \frac{1}{7}$$

$$x = \pm \sqrt{\frac{1}{7}}$$

3. $2x^2 - x - 28 = 0$ 7, 4

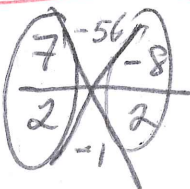
$$(2x + 7)(x - 4) = 0$$

$$x = -\frac{7}{2}, x = 4$$

$a = 2$

$b = -1$

$c = -28$



$$7x - 8 = -56$$

$$7x - 8 = -1$$

$$\begin{matrix} 1, 52 \\ 2, 2 \end{matrix}$$

$$(x + \frac{7}{2})(x - \frac{8}{2})$$

$$(x + \frac{7}{2})(x - 4)$$

$$(2x + 7)(x - 4)$$

4. $6x^3 + 15x^2 - 9x = 0$

$$3x(2x^2 + 5x - 3) = 0$$

$$3x(2x - 1)(x + 3) = 0$$

$$x = 0, \frac{1}{2}, -3$$

5. $2x^2 + 16x = 40$

$$2x^2 + 16x - 40 = 0$$

$$2(x^2 + 8x - 20) = 0$$

$$2(x + 10)(x - 2) = 0$$

$$x = -10, 2$$

6. $9x^2 = 4$

$$9x^2 - 4 = 0$$

$$(3x - 2)(3x + 2) = 0$$

$$x = \frac{2}{3}, -\frac{2}{3}$$

$$7. 2x^2 - 98 = 0$$

$$2(x^2 - 49) = 0$$

$$2(x-7)(x+7) = 0$$

$$x = 7, -7$$

$$8. 3x^2y - 6xy - 45y = 0$$

$$3y(x^2 - 2x - 15)$$

$$3y(x-5)(x+3)$$

$$9. 2x^2 = -8x + 42$$

$$2x^2 + 8x - 42 = 0$$

$$2(x^2 + 4x - 21) = 0$$

$$2(x+7)(x-3) = 0$$

$$x = -7, 3$$

$$10. 6bx^2 + 7bx + 2b = 0$$

$$b(6x^2 + 7x + 2)$$

$$b(3x+2)(2x+1)$$

$$11. 4x^2 + 6x - 4 = 0$$

$$2(2x^2 + 3x - 2) = 0$$

$$2(2x-1)(x+2) = 0$$

$$x = \frac{1}{2}, -2$$

$$12. 12x^2 - 2x = 30$$

$$12x^2 - 2x - 30 = 0$$

$$2(6x^2 - x - 15) = 0$$

$$2(3x-5)(2x+3) = 0$$

$$x = \frac{5}{3}, -\frac{3}{2}$$