

9/17/10

FACTOR

1) $3x^4 - 6x^3 = 3x^3(x-2)$

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

3) $4x^2 - 9 = (2x-3)(2x+3)$

4) $x^3 - 8 = (x-2)(x^2+2x+4)$ using $(a^3-b^3) = (a-b)(a^2+ab+b^2)$

5) $x^2 - 5x - 6 = (x-6)(x+1)$

6) $m^2 + 5mn + 4n^2 = (m+4n)(m+n)$

7) $a^4 + 7a^2 + 12 = (a^2+3)(a^2+4)$

8) $3t^3 - 4t^2 + t = t(3t^2 - 4t + 1) = t(3t-1)(t-1)$

9) $15x^2 - 25x - 10 = 5(3x^2 - 5x - 2) = 5(3x+1)(x-2)$

10) $9x^2 + 24x + 16 = (3x+4)^2$

11) $14x^2 + 19x - 3 = (7x-1)(2x+3)$

12) $9x^2 + 18x + 8 = (3x+2)(3x+4)$

13) $7x^3 - 14x^2 - x + 2 = 7x^2(x-2) - 1(x-2) = (x-2)(7x^2-1)$

SOLVE

14) $x^2 - 5x = 18 + 2x$

$$x^2 - 7x - 18 = 0$$

$$(x-9)(x+2) = 0$$

$$x - 9 = 0 \quad \text{or} \quad x + 2 = 0$$

$$\boxed{x = 9 \quad \text{or} \quad x = -2}$$

15) $3x^2 - 7x - 10 = 0$

$$(3x-10)(x+1) = 0$$

$$3x - 10 = 0 \quad \text{or} \quad x + 1 = 0$$

$$3x = 10 \quad \quad \quad x = -1$$

$$\boxed{x = 10/3 \quad \text{or} \quad x = -1}$$