Higher Degree Equations (degree >2)
and Equations Quadratic in Form

Worksheet to Accompany Videotape #19

Solve each equation for \( x \):

1. \( x^3 + 2x^2 = 3x \)

2. \( 4x^3 - 8x^2 - x + 2 = 0 \)

3. \( x^4 - 5x^2 = 14 \)

4. \( 2x^6 + 15x^3 - 8 = 0 \)

**NOTICE:**
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5. \( x^{2/3} - 3x^{1/3} + 2 = 0 \)

6. \( 3x^{-2} - 4x^{-1} = -1 \)

7. \( (x-5)^2 + 5(x-5) - 14 = 0 \)

Key:
1) 0, -3, 1
2) 2, \( \frac{1}{2}, - \frac{1}{2} \)
3) \( +\sqrt{7}, +\sqrt{-2} \) Not a real solution
4) \( \frac{1}{\sqrt[3]{2}}, -2 \)
5) 8, 1
6) 3, 1
7) 7, -2