The Square Root Theorem

If \( x = a \), where \( A \) is a real number, then either

\[
x = \sqrt{a} \quad \text{or} \quad x = -\sqrt{a}
\]

- Using the Square Root Theorem, solve for the variable and CHECK.

1. \( x^2 = 49 \) 

2. \( m^2 = 72 \)

3. \( 5y^2 - 7 = -97 \)

4. \( \frac{5}{6}x^2 = \frac{3}{8} \)

5. \( (5n - 3)^2 = 16 \)

6. \( (t - 5)^2 = -28 \)

Completing the Square

Completing the square is a process that changes a Quadratic Equation

\[
ax^2 + bx + c = 0
\]

into the form

\[
a(x - h) = k
\]

- Complete the square. Do not solve.

7. \( x^2 - 8x + 16 = 0 \)

8. \( x^2 + 3x + \frac{9}{4} \)
9. \(2x^2 - 4x + 5 = 0\)  
10. \(3p^2 - x - 6 = 0\)  

- Solve by completing the Square and check.  

11. \(2t^2 - 5 = -3t\)  
12. \(r^2 - 2r + 50 = 0\)  

13. \(2x^2 = 6x - 3\)  
14. \(z^2 + 2z = 6\)  

15. \(u^2 + \frac{1}{2}u = \frac{3}{2}\)  

★ Challenge Problem (To Keep you all Off the streets) ... please work in groups.  

16. Complete the square of \(ax^2 + bx + c = 0\) and solve for \(x\).