Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Solve the equation $x^2 + 8x - 4 = 0$ by completing the square.

2. Use the quadratic formula to solve the equation $3x^2 + 2x - 4 = 0$.

3. Sam's garden is 20 ft wide by 30 ft long. She wants to increase the length and the width of her garden by the same amount so as to have a 1000 ft^2 garden. By how much should she increase each dimension?