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. Compute and simplify:

   (a) $(2\sqrt{3} - \sqrt{6})(\sqrt{3} + 2\sqrt{6}) =$

   (b) $\sqrt{8x^3} + \sqrt[3]{54x^4} - x\sqrt{2x} =$

2. Rationalize the denominator and simplify:

   (a) $\dfrac{\sqrt{2} - \sqrt{5}}{\sqrt{5}} =$

   (b) $\dfrac{2 - \sqrt{3}}{\sqrt{2} + \sqrt{6}} =$

3. Solve the radical equation:
$$\sqrt{x+7} - 2\sqrt{x} = -2.$$