Week 2 – Math 150 Challenge problems (We have three problems this week, of varying difficulties)

Problem #1

Simplify, always keeping the problem in exponential form.

$$\frac{22^{44}}{44^{22}}$$

Problem #2

Solve for x:

$$\sqrt{48} + \sqrt{243} + \sqrt{3x} = \sqrt{27}$$

Problem #3

Simplify:

$$\frac{\sqrt{18}}{\sqrt{32}} + \frac{\sqrt[3]{4}}{\sqrt[3]{32}} - \frac{\sqrt[5]{2}}{\sqrt[5]{64}}$$