Take Home Quiz # 1

- Justify and show the means by which you arrive at your answers using equations, pictures, calculations, geometry, algebra steps, and/or technology. *You will not receive full credit if your answer is not supported by work that is legible and organized.*
- Place a box around your final answer. *It won't be graded if you do not do this!*
- Make your answers and their presentation in a professional and easily understandable format … make this your clearest and best work! *Points will be deducted for disorganized , sloppy work.*

8.1

1. Simplify these radicals

   a. $\sqrt{121}$

   b. $\sqrt{a^{10}}$

   c. $\sqrt[3]{-125}$

   d. $\sqrt{49x^4y^6}$

   e. $\sqrt[3]{-27m^6}$

   f. $\sqrt[4]{81b^{12}}$

8.2

Use the radical product property to simplify the radical expressions.

2. $\sqrt{80x^3y^8}$

3. $\sqrt[3]{54a^6b^8}$

4. $\sqrt[4]{\frac{p^9q^8}{16p^3}}$

8.3

Use rational exponents to simplify the expressions. Assume that all variables are positive.

5. $(125x^9y^6)^{\frac{1}{3}}$

6. $\left(\sqrt[8]{16x^4y^{10}}\right)^2$

7. The function $C(w) = 70w^{\frac{3}{4}}$ models the number of calories (C) per day a person needs as a function of their weight (w) in kilograms. Find the number of calories necessary for a person who weighs 82 kilograms.

8.4

Simplify the expressions

8. $\sqrt{12d^2} + \sqrt{75d^2} - \sqrt{27d^2}$

9. $\sqrt[3]{6x^7y} \bullet \sqrt[3]{9x^4y^{12}}$

10. $\left(\sqrt{3} + 3\sqrt{5}\right)\left(\sqrt{3} - 2\sqrt{5}\right)$