| Math1210 Quiz 12 (3.8, 3.9, 4.1) | Summer, 2009 | Dylan Zwick |
|----------------------------------|--------------|-------------|
| Name | Date | |

Instructions: Please show all of your work as partial credit will be given where appropriate, **and** there may be no credit given for problems where there is no work shown. All answers should be completely simplified, unless otherwise stated.

Potentially Useful Formulas

$$\sum_{i=1}^{n} i = \frac{n(n+1)}{2}$$
$$\sum_{i=1}^{n} i^{2} = \frac{n(n+1)(2n+1)}{6}$$
$$\sum_{i=1}^{n} i^{3} = \frac{n^{2}(n+1)^{2}}{4}$$

1. (7 pts) Solve this differential equation.

$$\frac{dy}{dx} = \frac{x+3x^2}{y^2} \quad \text{and} \quad y=2 \quad \text{when} \quad x=0$$

2. (4 points) Evaluate.

$$\sum_{i=1}^{10} \left[(3i\!-\!4)(i\!+\!5) \right]$$

Answer 2: _____

3. (4 points) Evaluate.

$$\int (5x^3\sqrt{2x^4+3})\,dx$$

Answer 3: _____