Math 1010 - Quiz 9

University of Utah

Fall 2009

Name: Solutions

1. Simplify the expression: (4 points)

$$\sqrt{16x^2y^3}$$

$$= 4|x|y\sqrt{y}$$

2. Calculate and simplify: (4 points)

$$8\sqrt{27} - 3\sqrt{3}$$

$$= 8\sqrt{9}\sqrt{3} - 3\sqrt{3}$$

$$= 8(3)\sqrt{3} - 3\sqrt{3}$$

$$= 24\sqrt{3} - 3\sqrt{3}$$

$$= \boxed{21\sqrt{3}}$$

3. Simplify the expression: (4 points)

$$\frac{5}{9-\sqrt{6}}$$

$$= \left(\frac{5}{9-\sqrt{6}}\right)\left(\frac{9+\sqrt{6}}{9+\sqrt{6}}\right) = \frac{45+5\sqrt{6}}{81-6}$$

$$= \frac{5(9+\sqrt{6})}{75} = \boxed{\frac{9+\sqrt{6}}{15}}$$

4. Calculate and simplify: (3 points)

$$\sqrt{-25} - \sqrt{-9}$$

$$= \sqrt{25}\sqrt{-1} - \sqrt{9}\sqrt{-1}$$

$$= 5i - 3i = \boxed{2i}$$