Name: _____

Student ID: _____

- ❖ Show all work
- ❖ No notes, books, or calculators allowed.
- ❖ Write answers in lowest terms when possible

Simplify the radicals.

1. (2 points) $\sqrt{6}\sqrt{18}$

$$= \sqrt{6}\,\sqrt{6}\cdot\sqrt{3} = \boxed{6\sqrt{3}}$$

2. (2 points) $\sqrt{16x^4y^7}$

$$= \sqrt{16}\,\sqrt{x^4}\,\sqrt{y^6}\cdot\sqrt{y}$$

$$= \boxed{4x^2y^3\sqrt{y}}$$

3. (3 points) $4\sqrt{3} + 5\sqrt{3} - 3\sqrt{27}$

$$= 4\sqrt{3} + 5\sqrt{3} - 3\sqrt{9}\sqrt{3}$$

$$= 9\sqrt{3} - 3\cdot3\sqrt{3} = 9\sqrt{3} - 9\sqrt{3} = \boxed{0}$$

4. (3 points) $8x\sqrt{9x^2y} + x^2\sqrt{4y}$

$$= 8x\cdot\sqrt{9}\cdot\sqrt{x^2}\cdot\sqrt{y} + x^2\sqrt{4}\cdot\sqrt{y}$$

$$= 8x\cdot3\cdot x\cdot\sqrt{y} + x^2\cdot2\sqrt{y}$$

$$= 24x^2\sqrt{y} + 2x^2\sqrt{y} = \boxed{26x^2\sqrt{y}}$$