Name: _____ Date: _____

BLM 5–4

Section 5.1 Extra Practice

1. Express each radical as a simplified mixed radical.

a) $\sqrt{54}$

b) $\sqrt{350}$

c) $\sqrt{98x^2}, x \geq 0$

d) $\sqrt{363x^5y^3}, x \geq 0, y \geq 0$

2. Express each mixed radical as an equivalent entire radical.

a) $4\sqrt{5}$

b) $23\sqrt{13}$

c) $9x^2\sqrt{x}, x \geq 0$

d) $5xy\sqrt{7y}, x \geq 0, y \geq 0$

3. Order each set of numbers from least to greatest.

a) $-2\sqrt{3}, \sqrt{50}, -\sqrt{14}, 3\sqrt{5}$

b) $\sqrt{18}, \sqrt{2}, 6\sqrt{2}, \sqrt{32}$

c) $-\sqrt{60}, -3\sqrt{\frac{5}{2}}, -\sqrt{16}, -5\sqrt{3}$

d) $4\sqrt{3}, \sqrt{12}, 2\sqrt{6}, \sqrt{20}$

4. Simplify each expression.

a) $7\sqrt{11} - 3\sqrt{11} + 8\sqrt{11}$

b) $4\sqrt{3x} - 4\sqrt{2} + \sqrt{3x} - \sqrt{2}$

c) $9\sqrt{6} + 12 - \sqrt{6} + 4$

d) $6\sqrt{5} - \sqrt{7y} + 4\sqrt{5} - 3\sqrt{7y}$

5. Simplify each expression.

a) $3\sqrt{20d} + 5\sqrt{45d}$

b) $\sqrt{10e} - \sqrt{90e} + 4\sqrt{40e}$

c) $5\sqrt{3} + \sqrt{12} - \sqrt{48} + 2\sqrt{75}$

d) $\sqrt{63} + \sqrt{75} - 2\sqrt{28} - 3\sqrt{27}$

6. Simplify each expression. Identify any restrictions on the values of the variables.

a) $3\sqrt{x} - \sqrt{4x} + \sqrt{x}$

b) $\sqrt{x^5} + \sqrt{9x^5}$

c) $\sqrt{9x} + \sqrt{x^3} - 4\sqrt{x} - x\sqrt{9x}$

d) $x^2\sqrt{16y} + 3\sqrt{x^4y}$

7. Simplify each expression.

a) $\sqrt[3]{56}$

b) $\sqrt[3]{8x^5y}$

c) $\sqrt[3]{5} - \sqrt[3]{625}$

d) $\sqrt[3]{x^3} + 4\sqrt[3]{x} - x\sqrt[3]{27} - \sqrt[3]{64x}$

8. What is the perimeter of the right triangle shown? State the answer as an exact value.