Algebra: Simplifying Radical Expressions

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Name: _____ Date: _____ Score: / 10

DIRECTIONS *Simplify each radical expression. Combine like radicals where applicable.*

1 Simplify:

$$5\sqrt{7} - 2\sqrt{7}$$

Answer: _____

2 Simplify the radical:

$$\sqrt{200}$$

Answer: _____

3 Simplify:

$$2\sqrt{3} + 3\sqrt{12}$$

Answer: _____

4 Simplify the radical:

$$\sqrt{50}$$

Answer: _____

5 Simplify the radical:

$$\sqrt{98}$$

Answer: _____

6 Simplify the radical:

$$\sqrt{75}$$

Answer: _____

7 Simplify:

$$3\sqrt{2} + 5\sqrt{2}$$

Answer: _____

8 Simplify:

$$4\sqrt{5} + \sqrt{5}$$

Answer: _____

9 Simplify the radical:

$$\sqrt{180}$$

Answer: _____

10 Simplify the radical:

$$\sqrt{108}$$

Answer: _____

Answer Key & Solutions

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TEACHER NOTES *Factor out perfect squares first. Combine only like radicals (same index and radicand).*

1 Simplify:

$= 3\sqrt{7}$

$5\sqrt{7} - 2\sqrt{7}$

2 Simplify the radical:

$= 10\sqrt{2}$

$\sqrt{200}$

3 Simplify:

$= 8\sqrt{3}$

$2\sqrt{3} + 3\sqrt{12}$

4 Simplify the radical:

$= 5\sqrt{2}$

$\sqrt{50}$

5 Simplify the radical:

$= 7\sqrt{2}$

$\sqrt{98}$

6 Simplify the radical:

$= 5\sqrt{3}$

$\sqrt{75}$

7 Simplify:

$= 8\sqrt{2}$

$3\sqrt{2} + 5\sqrt{2}$

8 Simplify:

$= 5\sqrt{5}$

$4\sqrt{5} + \sqrt{5}$

9 Simplify the radical:

$= 6\sqrt{5}$

$\sqrt{180}$

10 Simplify the radical:

$= 6\sqrt{3}$

$\sqrt{108}$