

Name: _____

Algebra

Date: _____ Per: _____

Unit 1 : Radicals

Simplify, Add, and Subtract Radicals

Write final answers in simplest radical form.

1. $\sqrt{275}$

2. $-4\sqrt{108}$

3. $\sqrt[3]{135}$

4. $4\sqrt[3]{-88}$

5. $-2\sqrt{196k^8}$

6. $5\sqrt{147x^9y^{16}z^2}$

7. $-5\sqrt{2} - 3\sqrt{2}$

8. $2\sqrt{7} + 3\sqrt{28}$

9. $8\sqrt{75} - \sqrt{192} + 4\sqrt{6}$

10. $4\sqrt{125} - 2\sqrt{243} - 3\sqrt{20} + 5\sqrt{27}$

1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

7. _____

8. _____

9. _____

10. _____

B. _____

BONUS: $5x^2\sqrt{18xy} + \sqrt{72x^5y} - x^2\sqrt{2xy}$

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Radicals

Multiplying & Dividing Radicals

Part I – Multiplying Radicals: Write all answers in simplest radical form.

1. $-\sqrt{6} \cdot 5\sqrt{2}$

2. $2\sqrt{30n^3} \cdot 7\sqrt{6n^5}$

3. $\sqrt{20}(4 + \sqrt{10})$

4. $-3\sqrt{3}(\sqrt{8} + 5\sqrt{2})$

5. $(4 + \sqrt{2})(1 + \sqrt{2})$

6. $(3\sqrt{7} - 2)^2$

- 1. _____
- 2. _____
- 3. _____
- 4. _____
- 5. _____
- 6. _____
- 7. _____
- 8. _____
- 9. _____

Part II – Dividing Radicals: Write all answers in simplest radical form.

7. $\frac{18\sqrt{80}}{3\sqrt{2}}$

8. $\frac{2\sqrt{20}}{5\sqrt{36}}$

9. $\sqrt{\frac{27}{5}}$

10. $\frac{9\sqrt{10}}{3\sqrt{12}}$

11. $\frac{2\sqrt{27}}{4\sqrt{6}}$

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

B. _____

12. $\frac{6-\sqrt{2}}{\sqrt{2}}$

13. $\frac{8+\sqrt{2}}{3\sqrt{6}}$

14. $\frac{\sqrt{12}}{2+\sqrt{3}}$

15. $\frac{4+\sqrt{5}}{2-\sqrt{5}}$

BONUS: Write an expression to represent the volume of the rectangular prism below in simplest radical form.

