

Name _____

Block ____

Alg2: Powers, Roots

You are not allowed to use a calculator in this test. If this presents an un-due burden, please let me know.

1. Simplify: $\sqrt{50 x^2 y^3 z^4}$	2. Simplify: $3 \cdot \sqrt{3x} \cdot \sqrt{12x}$
3. Simplify: $(2\sqrt{3} - \sqrt{6}) \cdot 2\sqrt{6}$	4. Simplify: $(5 - \sqrt{18}) \cdot (5 + 3\sqrt{2})$
5. Simplify: $3\sqrt{50} + \sqrt{32} - 3\sqrt{2} - 8\sqrt{8}$	6. Simplify: $\sqrt{48} + 2\sqrt{12} + 4\sqrt{27}$

Name _____

Block ____

7. Simplify:

$$\frac{\sqrt{9x^2}}{\sqrt{36x^4}}$$

8. Rationalize denominator :

$$\sqrt{\frac{3}{5}}$$

9. Rationalize denominator:

$$\frac{x}{4 + 3\sqrt{2}}$$

10. Rationalize denominator:

$$\frac{1 + 2\sqrt{5}}{1 - 2\sqrt{5}}$$

11. Simplify : $(27)^{\frac{3}{4}}$ 12. Simplify: $(4)^{\frac{-5}{2}}$

13. Write using rational exponents:

$$\sqrt[3]{27x^3y^6z}$$

14. Write using rational exponents:

$$\frac{y\sqrt{x}}{\sqrt[8]{x^4y^{16}z}}$$

Name _____

Block ____

15. Simplify: $(4)^{-\frac{1}{2}}$	16. Simplify: $\frac{\sqrt[3]{8}}{\sqrt[3]{-8}}$
17. Simplify: $(16x^4)^{\frac{3}{4}}$	18. Simplify (factoring would help) $\frac{\sqrt{a^2 - b^2}}{\sqrt{a - b}}$
19. Factor: $2x^2 - 4x$	20. Factor: $2x^2 - x - 15$

21. Extra Credit: Simplify:

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

=== End of test ===