Name: _____ Date: _____

RADICALS ARE IN SIMPLEST FORM WHEN…

- ☆ NO perfect square factors other than 1 are under the radical.
- ☆ NO fractions are under the radical
- ☆ NO radicals are in the denominator

What is the prime factorization of each number?

1. 54

2. 98

Simplify:

3. $\sqrt{45}$

4. $\sqrt{20}$

5. $\sqrt{12}$

6. $\sqrt{50}$

7. $\sqrt{200}$

8. $\sqrt{125}$

9. $-4\sqrt{40}$

10. $\sqrt{99}$

11. $\sqrt{108}$

SIMPLIFYING VARIABLES AS RADICANDS

- ☆ **Even Exponents** – Take half of the exponent OUTSIDE the radical and leave NOTHING under the radical sign
- ☆ **Odd Exponents** – Leave ONE exponent UNDER the radical and take HALF of the rest OUTSIDE the radical sign

12. $\sqrt{x^6}$	13. $\sqrt{49x^5}$	14. $\sqrt{36y^4}$
15. $\sqrt{16x^2}$	16. $\sqrt{a^3b^5}$	17. $\sqrt{18x^7y^4}$
18. $\sqrt{90x^5y}$	19. $\sqrt{24x^2y^9}$	20. $-2\sqrt{15x^2y^8}$
21. $\sqrt{196x^7y^8}$	22. $\sqrt{450c^5}$	23. $3\sqrt{48y^{12}}$