Name: _____ Date: _____

Simplifying Radicals

RADICALS ARE IN SIMPLEST FORM:
- ☆ 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?

- 45

- 54

- 98

Simplify:

1. $\sqrt{45}$

2. $-\sqrt{98}$

3. $\sqrt{48}$

4. $2\sqrt{45}$

5. $\sqrt{20}$

6. $4\sqrt{40}$

7. $-\sqrt{99}$

8. $\sqrt{108}$

SIMPLIFYING VARIABLES ᴀs RADICALS:

☆ 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.

Simplify:

9. $\sqrt{x^6}$

10. $\sqrt{a^3b^4}$

11. $\sqrt{18c^5d^4}$

Practice:

1. $\sqrt{125}$

2. $\sqrt{200}$

3. $\sqrt{16x^2}$

4. $-2\sqrt{15x^2y^8}$

5. $\sqrt{450x^5}$

6. $\sqrt{196x^7y^4}$

7. $2\sqrt{24x^2y^9}$

8. $3\sqrt{48y^{12}}$