Name:_____   Period:_____Date:_____

Simplifying Radicals

Section I. **Prime Factor Radicals in order to simplify**

ie: $\sqrt{12} = \sqrt{2 \cdot 2 \cdot 3} = \pm 2\sqrt{3}$ ie: $\sqrt{700} = \sqrt{2 \cdot 2 \cdot 5 \cdot 5 \cdot 7} = 2 \cdot 5\sqrt{7} = \pm 10\sqrt{7}$

1. $\sqrt{20} = \sqrt{\underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad}} = \pm\underline{\quad}\sqrt{\underline{\quad}}$

2. $\sqrt{45} = \sqrt{\underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad}} = \pm\underline{\quad}\sqrt{\underline{\quad}}$

3. $\sqrt{75} = \sqrt{\underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad}} = \pm\underline{\quad}\sqrt{\underline{\quad}}$

4. $\sqrt{147}$

5. $\sqrt{98}$

6. $\sqrt{50}$

7. $\sqrt{27}$

What are some prime Numbers?
_____, _____, _____,
_____, _____, _____,
_____, _____, _____,
_____, _____, _____

8. $\sqrt{180} = \sqrt{\underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad}} = \underline{\quad} \cdot \underline{\quad}\sqrt{\underline{\quad}} = \pm\underline{\quad}\sqrt{\underline{\quad}}$

9. $\sqrt{108} = \sqrt{\underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad}} = \underline{\quad} \cdot \underline{\quad}\sqrt{\underline{\quad}} = \pm\underline{\quad}\sqrt{\underline{\quad}}$

10. $\sqrt{243} = \sqrt{\underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad} \cdot \underline{\quad}} = \underline{\quad} \cdot \underline{\quad}\sqrt{\underline{\quad}} = \pm\underline{\quad}\sqrt{\underline{\quad}}$

11. $\sqrt{32} =$

12. $\sqrt{80} =$

13. $\sqrt{392} =$