

Right Triangles – Simplifying Radicals

Hw Section 8.1

Name _____

Simplify.

$$1. \sqrt{27} = \sqrt{9} \sqrt{3} \\ = 3\sqrt{3}$$

$$2. \sqrt{98} = \sqrt{49} \cdot \sqrt{2} \\ = 7\sqrt{2}$$

$$3. 3\sqrt{18} = 3 \cdot \sqrt{9} \cdot \sqrt{2} \\ = 3 \cdot 3\sqrt{2} \\ = 9\sqrt{2}$$

$$4. \sqrt{54} = \sqrt{9} \cdot \sqrt{6} \\ = 3\sqrt{6}$$

$$5. \sqrt{8^2} = 8$$

$$6. \sqrt{k^7} = \sqrt{k^2} \cdot \sqrt{k^2} \cdot \sqrt{k^2} \cdot \sqrt{k} \\ = k \cdot k \cdot k \sqrt{k} \\ = k^3 \sqrt{k}$$

$$7. \sqrt{2} \cdot \sqrt{2} = 2$$

$$8. -(\sqrt{5})^2 = -5$$

$$9. (-\sqrt{7})^2 = (-\sqrt{7})(-\sqrt{7}) \\ = +7$$

$$10. \sqrt{8^2} = 8$$

$$11. \sqrt{9} \cdot \sqrt{2} = 3\sqrt{2}$$

$$12. \sqrt{121} \cdot \sqrt{169} = 11 \cdot 13 \\ = 143$$

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$$13. \frac{\sqrt{32}}{\sqrt{2}} = \sqrt{16}$$

$$= 4$$

$$17. \frac{3}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{3\sqrt{3}}{3}$$

$$= \sqrt{3}$$

$$14. \frac{\sqrt{50}}{\sqrt{2}} = \sqrt{25}$$

$$= 5$$

$$18. \frac{2}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$$

$$= \sqrt{2}$$

$$15. \frac{8\sqrt{15}}{3\sqrt{5}} = \frac{8\sqrt{3}}{3}$$

$$19. \frac{\sqrt{8}}{\sqrt{64}} = \frac{\sqrt{4} \cdot \sqrt{2}}{8}$$

$$= \frac{\cancel{2}\sqrt{2}}{8 \cdot 4}$$

$$= \frac{\sqrt{2}}{4}$$

$$16. \frac{7\sqrt{28}}{\sqrt{7}} = 7\sqrt{4}$$

$$= 7 \cdot 2$$

$$= 14$$

$$20. \frac{\sqrt{41}}{\sqrt{44}} = \frac{\sqrt{41}}{2\sqrt{11}}$$

$$= \frac{1}{2}$$