

**HOMEWORK: Simplifying Radicals 4.5**

**Day 8**

Please simplify the following expressions. Use a separate sheet to show work if necessary.

1. $\sqrt{45}$ $3\sqrt{5}$	2. $\sqrt{98}$ $7\sqrt{2}$	3. $\sqrt{28}$ $2\sqrt{7}$
4. $5\sqrt{3} \cdot \sqrt{27}$ $45$	5. $7\sqrt{6} \cdot \sqrt{2}$ $14\sqrt{3}$	6. $4\sqrt{6} \cdot \sqrt{12}$ $24\sqrt{2}$
7. $\sqrt{\frac{64}{121}}$ $\frac{8}{11}$	8. $\sqrt{\frac{5}{4}}$ $\frac{\sqrt{5}}{2}$	9. $\sqrt{\frac{8}{9}}$ $\frac{2\sqrt{2}}{3}$
10. $\sqrt{\frac{5}{2}}$ $\frac{\sqrt{10}}{2}$	11. $\sqrt{\frac{2}{3}}$ $\frac{\sqrt{6}}{3}$	12. $\sqrt{\frac{7}{8}}$ $\frac{\sqrt{14}}{4}$
13. $\frac{1}{\sqrt{7}}$ $\frac{\sqrt{7}}{7}$	14. $\frac{2}{\sqrt{5}}$ $\frac{2\sqrt{5}}{5}$	15. $\frac{6}{\sqrt{12}}$ $\sqrt{3}$

State the conjugate of each of the following expressions.

16. $5 + \sqrt{6}$ $5 - \sqrt{6}$	17. $9 - 3\sqrt{2}$ $9 + 3\sqrt{2}$	18. $-4 - \sqrt{11}$ $-4 + \sqrt{11}$
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State the denominator's conjugate in each of the following expressions.

19. $\frac{7 + \sqrt{10}}{12 + \sqrt{13}}$ $12 - \sqrt{13}$	20. $\frac{8 - 3\sqrt{2}}{10 - 2\sqrt{5}}$ $10 + 2\sqrt{5}$	21. $\frac{14 - 6\sqrt{5}}{15 + 8\sqrt{3}}$ $15 - 8\sqrt{3}$
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Rationalize by multiplying the numerator and denominator by the denominator's conjugate.

$$22. \frac{4}{1-\sqrt{3}} \quad -2-2\sqrt{3}$$

$$23. \frac{-5}{3+\sqrt{7}} \quad -\frac{15}{2} + \frac{5\sqrt{7}}{2}$$

$$24. \frac{8}{9-2\sqrt{3}} \quad \frac{24}{23} + \frac{16\sqrt{3}}{69}$$

$$25. \frac{4-\sqrt{7}}{5+\sqrt{2}} \quad \frac{20-4\sqrt{2}-5\sqrt{7}+\sqrt{14}}{23}$$

$$26. \frac{3+\sqrt{5}}{3-\sqrt{5}} \quad \frac{7}{2} + \frac{3\sqrt{5}}{2}$$