

## Algebra 2 Honors

## 6-6 Assignment

Write the original problem 5-8 without calculator.

Name Key

1. $\sqrt[3]{10}$	2. $\sqrt[5]{x^3}$	3. $\sqrt[3]{15}$	4. $7^{\frac{1}{4}} x^{\frac{3}{2}} y^{\frac{9}{4}}$
5. 7	6. 25	7. $\frac{1}{2}$	8. $(\sqrt[2]{4})^3 = 3$
9. 13 ft			
Write the original problem. Show each step to get to the simplified expression.			
10. $a^{\frac{5}{4}}$	11. $x^{\frac{3}{5}}$	12. $b^{(3-\frac{1}{3})} c^{(1-\frac{1}{2})}$ $b^{\frac{8}{3}} c^{\frac{1}{2}}$	
13. $\sqrt[4]{3^2 g^2} = \sqrt[4]{(3g)^2}$ $= \sqrt[2]{3g}$		14. $\sqrt[5]{16}$ $\sqrt[5]{\frac{64}{4}}$	

18. $\sqrt[4]{a^3}$	19. $\sqrt{x^9}$	22. $5^{\frac{1}{3}} x^{\frac{1}{3}} y^{\frac{2}{3}}$	23. $5x^{\frac{1}{2}}$ or $5\sqrt{x}$
24. no calculator $\sqrt[3]{27} =$ 3	25. no calculator $\sqrt[4]{256} =$ 4	26. no calculator $(\sqrt[2]{16})^{-1} =$ $\frac{1}{4}$	27. no calculator $(\sqrt[4]{81})^{-1} =$ $\frac{1}{3}$
28. a.) 4.62 in b.) 4.77 in			
29. 2.64 cm			
31. $a^{\frac{25}{36}}$	<del>32.</del>	34. $\frac{\sqrt[8]{3^4}}{\sqrt[6]{3^1}} = \frac{3^{\frac{4}{8}}}{3^{\frac{1}{6}}} = 3^{\left(\frac{1}{2} - \frac{1}{6}\right)} = \sqrt[3]{3}$	
35. $\sqrt[4]{\frac{27}{3}} = \sqrt[4]{9} = \sqrt[2]{3}$	36. $\sqrt[4]{5^2 x^2} = 5^{\frac{1}{2}} x^{\frac{1}{2}} = \sqrt{5x}$	37. $\sqrt[6]{81g^3} = 3^{\frac{4}{6}} \cdot g^{\frac{3}{6}} = 3^{\frac{2}{3}} g^{\frac{1}{2}} = \sqrt[3]{9} \cdot \sqrt{g}$	
★ 42. $2^{\frac{1}{2}} \cdot 9^{\frac{1}{2}} + 2^{\frac{1}{2}} - 2^{\frac{5}{2}} = 2^{\frac{1}{2}}(2^2 \cdot 2^{\frac{1}{2}})$ $3\sqrt{2} + \sqrt{2} - 4\sqrt{2} = 0$		46. b $\frac{1}{4}$	