Algebra 2H **HW#_____** **Name_____**
Worksheet 7-2

Date_____Per._____ Col._____

Simplify. Express each answer as an integer, a fraction, or a radical in simplest form.		
1. $\sqrt{8} \cdot \sqrt[6]{8}$	**2.** $\dfrac{\sqrt[6]{8^3}}{\sqrt[6]{4^2}}$	**3.** $\sqrt[4]{27} \cdot \sqrt[8]{9}$
4. $\dfrac{\sqrt[10]{32}}{\sqrt[8]{4}}$	**5.** $\dfrac{10^{\sqrt{3}-2}}{10^{\sqrt{3}+2}}$	**6.** $\left(2^{\sqrt{2}}\right)^{-1/\sqrt{2}}$
7. $\dfrac{16^{2/3}}{16^{1/6}}$	**8.** $\dfrac{6^{\sqrt{2}} \cdot 6^{\sqrt{8}}}{6^{\sqrt{18}}}$	**9.** $\dfrac{125^{2/9} \cdot 125^{1/9}}{5^{1/4}}$
10. $\left(10^{3/4} \cdot 4^{3/4}\right)^{-4}$	**11.** $\left(\dfrac{25}{64}\right)^{-1/2}$	**12.** $\dfrac{70^{1/3}}{14^{1/3}}$

Simplify. Express each answer as an integer, a fraction, or a radical in simplest form.

13. $\left(x \cdot x^{1/4} \right)^{1/3}$

14. $\dfrac{\left(1+\sqrt{3}\right)^{\pi-1}}{\left(1+\sqrt{3}\right)^{\pi+1}}$

Express answers in simplest exponential form.

15. $\sqrt[4]{\dfrac{3^{1+\pi}}{3^{1-\pi}}}$

16. $\dfrac{x^{3/4}\, y\, z^{-1/3}}{y^{1/4}\, z^{2/3}}$

17. $\left(\dfrac{x^{1/\pi}}{y^{2/\pi}} \right)^{\pi}$

Solve for x. Round answers to the nearest hundredth.

18. $x = 522^{2/7}$

19. $3x^8 - 65 = -10$

Answers:

1. 4
2. $\sqrt[6]{32}$
3. 3
4. $\sqrt[4]{2}$
5. $\dfrac{1}{10{,}000}$
6. $\dfrac{1}{2}$
7. 4
8. 1
9. $\sqrt[4]{125}$
10. $\dfrac{1}{64{,}000}$
11. $\dfrac{8}{5}$
12. $\sqrt[3]{5}$
13. $\sqrt[12]{x^5}$
14. $\dfrac{2-\sqrt{3}}{2}$
15. $3^{\pi/2}$
16. $\dfrac{x^{3/4}\, y^{3/4}}{z}$
17. $\dfrac{x}{y^2}$
18. 5.98
19. ± 1.44