Algebra 2—H HW #_____ Name_____
7.2

Simplify. Express answer as an integer, fraction, or 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. $\dfrac{\left(1+\sqrt{3}\right)^{\pi-1}}{\left(1+\sqrt{3}\right)^{\pi+1}}$

10. $\dfrac{125^{2/9}\cdot 125^{1/9}}{5^{1/4}}$

11. $\left(10^{3/4}\cdot 4^{3/4}\right)^{-4}$

12. $\left(\dfrac{25}{64}\right)^{-1/2}$

13. $\dfrac{70^{1/3}}{14^{1/3}}$

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

Express answers in simplest exponential form.

15. $\sqrt[4]{\dfrac{9^{1-\pi}}{9^{1+\pi}}}$

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

20. Factor completely: $(2x-5)^3 + 8$