Unit 4 Review

Name_____Hr.___

4.1

Show All Work!

Simplify each expression completely.

1. $\sqrt{25p^4q^2}$

2. $\sqrt[4]{a^{16}b^8}$

3. $\sqrt[5]{32p^{25}q^{15}r^5s^{20}}$

4.2

Simplify each expression completely.

4. $\sqrt{9h^{22}}$

5. $\sqrt[3]{256t^4}$

6. $\sqrt[3]{2401x^5y^6}$

7. $\sqrt{507x^{17}y^{24}}$

4.2 cont.

Simplify each expression completely.

8. $\sqrt{3} + \sqrt{72} - \sqrt{128} + \sqrt{108}$

9. $5\sqrt{20} + \sqrt{24} - \sqrt{180} + 7\sqrt{54}$

10. $\dfrac{7}{4 - \sqrt{3}}$

11. $\dfrac{-2 - \sqrt{3}}{1 + \sqrt{3}}$

4.3

Write the given expression in radical form.

12. $m^{\frac{9}{17}}$

13. $\left(b^{13}\right)^{\frac{15}{7}}$

Write the given radical using rational exponents.

14. $\sqrt[2]{5a^5b^9}$

15. $\sqrt[6]{8x^3y}$

4.4

Solve the given equation.

16. $\sqrt[3]{c-1}=2$

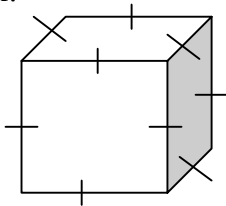**17.** $5+\sqrt{4y-5}=12$

4.5

18. $(5-2i)+(4+4i)$

19. $(3-4i)-(1-4i)$

20. $(-3-i)(2-2i)$

21. Mr. Fandango wants to know the dimensions of a perfect cubic swimming pool that can hold a volume of $42,875 \text{ ft}^3$ of water. The dimensions of the pool are:

(5x-15) ft.   by   (5x-15) ft.   by   (5x-15) ft.

Show work!

21. **solve for x =** _____

4