Name: _____

7.1-7.2 REVIEW

Evaluate each of the following.

1. $\sqrt[4]{81}$

3

2. $\sqrt[3]{-27}$

-3

3. $\left(\sqrt[4]{16}\right)^2$

$(2)^2$

4

4. $36^{-\frac{1}{2}}$

$\frac{1}{36^{1/2}} = \frac{1}{\sqrt{36}}$

$= \frac{1}{6}$

5. $8^{\frac{4}{3}}$

$\left(\sqrt[3]{8}\right)^4$

$(2)^4$

16

6. $\left(\frac{25}{9}\right)^{\frac{1}{2}}$

$\frac{25^{1/2}}{9^{1/2}}$ or $\sqrt{\frac{25}{9}}$

$\frac{5}{3}$

Simplify each expression completely.

7. $\sqrt[3]{40}$

$8 \wedge 5$

$2\sqrt[3]{5}$

8. $4\sqrt{12}$

$4 \wedge 3$

$4 \cdot 2\sqrt{3}$

$8\sqrt{3}$

9. $\sqrt{4x^2y^5}$

$2xy^2\sqrt{y}$

10. $\sqrt[3]{54x^5}$

$27 \wedge 2$

$3x\sqrt[3]{2x^2}$

11. $2\sqrt[3]{25} \cdot 3\sqrt[3]{5}$

$6\sqrt[3]{125}$

$6 \cdot 5$

30

12. $\sqrt[3]{2} \cdot \sqrt[3]{12}$

$\sqrt[3]{24}$

$8 \wedge 3$

$2\sqrt[3]{3}$

13. $\frac{\sqrt[4]{64}}{\sqrt[4]{4}}$

$\sqrt[4]{16}$

2

14. $-3\sqrt[3]{5}+7\sqrt[3]{5}$

$4\sqrt[3]{5}$

15. $3\sqrt{75}-2\sqrt{27}$

25^3 9^3

$3\cdot5\sqrt{3}-2\cdot3\sqrt{3}$

$15\sqrt{3}-6\sqrt{3}$

$9\sqrt{3}$

16. $x^{\frac{1}{2}}\cdot x^{\frac{4}{5}}$

$1/2+4/5$

x

need common denominator

$5/10+8/5$

x

$x^{13/5}$

17. $(9x)^{\frac{1}{2}}$

$9^{1/2}$ $x^{1/2}$

$\sqrt{9}\cdot\sqrt{x}$

$3\sqrt{x}$

18. $\frac{z^{\frac{4}{3}}}{z^{\frac{2}{3}}}$

$z^{2/3}$

Rewrite the expression in exponential form.

19. $\left(\sqrt[3]{z}\right)^5$

$5/3$

z

20. $\sqrt[3]{x}$

$1/3$

x

Rewrite the expression in radical form.

21. $x^{\frac{3}{4}}$

$\left(\sqrt[4]{x}\right)^3$

22. $y^{\frac{3}{2}}$

$\left(\sqrt{y}\right)^3$

You should be able to...

1. Evaluate radical and rational expressions

   Exs. $\sqrt{50}$, $\sqrt[3]{-8}$, $4^{\frac{3}{2}}$ ...

2. Simplify radical and rational expressions using the following properties:
   a. Rational exponents
   b. Multiplication
   c. Division
   d. Addition/subtraction

3. Simplify radical and rational expressions with variables