Real Numbers Test

Name: / 42

[8] 1. Write each radical in simplest form. Show your work.

[2] a. $\sqrt{112}$

[2] b. $3\sqrt{192x^3}$

[2] c. $-\sqrt[4]{240}$

[2] d. $4\sqrt[3]{324}$

[8] 2. Write as a whole radical. Show your work.

[2] a. $-5\sqrt{11}$

[2] b. $4\sqrt[3]{3}$

[2] c. $-3g\sqrt[4]{6g^2}$

[2] d. $2x^2y\sqrt[3]{7xy^2}$

[12] 3. Simplify. Show your work.

[2] a. $2\sqrt{24} \cdot \sqrt{10}$

[2] b. $\frac{8\sqrt{6}}{6\sqrt{10}}$

[2] c. $27^{x}(81^{x} \cdot 9^{2x})$

[2] d. $a^{5}(a^{2y} \cdot a^{4y})^{2}$

[2] e. $\frac{\sqrt{2}}{\sqrt[4]{4}}$

[2] f. $\sqrt[3]{x^{2}} \cdot \sqrt[4]{x}$

[4] 4. Evaluate. Show your work.

[2] a. $-\left(\frac{16}{81}\right)^{\frac{5}{4}}$

[2] b. $\left(\frac{64}{27}\right)^{-\frac{4}{3}}$

[4] 5. A rectangular solid has a length $\frac{3}{2}$ times the width and a height twice its width. If the volume of the rectangular solid is 648 cm^3, determine the dimensions of the rectangular solid. Show your work!

$A = l \cdot w$ $V = l \cdot w \cdot h$

[4] 6. The dimensions of a rectangular prism are: length $2\sqrt{10}$ cm, width $3\sqrt{14}$ cm, and height $\sqrt{35}$ cm. Determine the **area** of the **rectangular base** and the **volume** of the **rectangular prism**. Show your work!

$A = l \cdot w$ $V = l \cdot w \cdot h$

[2] 7. Simplify. Show your work!

[1] a. $\sqrt[8]{16}$ [1] b. $\sqrt[9]{27}$