

Name:

Unit 5 - Exponents

Per:

1) Simplify

$$-3.25^0$$

$$3^4 * 3^{3.5}$$

$$3^x * 3^{2+x}$$

$$5^{-2} * 3^2 * 5^{2.5}$$

$$(3^2)^{4.2}$$

$$(t^{-8})^{\square} = t^{16}$$

4) Write each expression in exponential form, then simplify if possible.

$$3. \sqrt[3]{8^2} \quad 6. \sqrt[3]{8x} \quad 7. \sqrt[3]{64x^7} \quad 8. \sqrt[3]{(27x)^2}$$

2) Simplify

$$\frac{x^{3y}y^7z^{-2.5}}{x^y y^{-3}z^5}$$

$$a^5b^{-3}c^2 * (a^{-3}b^0c^{1.2})$$

$$(3 \times 10^{-2})^3 * (4.35) * (0.021 \times 10^5)$$

$$(a^2b^{-3}c^4)^{-2}(3a)^{2.5}$$

$$(x^{13}y^6)^{-2}(y^{-5}x^{10})^6$$

3) The radius of a cylinder is 6.8×10^5 m. The height of the cylinder is 2.2×10^3 m. What is the volume of the cylinder?
(Hint: $V = 3.14r^2h$)

5) Simplify each expression using the properties of exponents, and then write the expression in radical form.

$$9. \left(a^{\frac{2}{3}}\right)\left(a^{\frac{1}{4}}\right) \quad 10. (ab)^{\frac{1}{3}}\left(b^{\frac{1}{2}}\right)$$

6) Simplify each radical expression.

$$10. \sqrt{\frac{49}{81}}$$

$$13. \sqrt{\frac{25a^5}{9a^7}}$$

$$16. \sqrt{\frac{50z^3}{4a^2}}$$

$$11. \sqrt{\frac{18x^4}{200}}$$

$$14. \sqrt{\frac{40b^4}{12b^3}}$$

$$17. \sqrt{\frac{t^5}{64}}$$