

Answer each question, making sure to **SHOW ALL OF YOUR WORK** in the space provided. You must use the indicated method to earn full credit. Take the time to check your work. Write neatly.

1. *Simplify.*

$$(9w^2x^8)(-2w^6x^4)$$

2. *Simplify.*

$$\frac{a^7b^8c^8}{a^5bc^7}$$

3. *Simplify.*

$$(-2b^5k^7)^4$$

4. *Simplify.*

$$\left(-\frac{5f^9g^4h^2}{fg^2h^3}\right)^0$$

5. *Simplify.*

$$\frac{r^6n^{-7}}{r^4n^2}$$

6. *Simplify.*

$$\sqrt{27}$$

7. *Simplify.*

$$\sqrt{150}$$

8. *Simplify.*

$$\sqrt{28a^4b^3}$$

9. *Rationalize the Denominator and Simplify.*

$$\frac{2}{\sqrt{7}}$$

10. *Simplify.*

$$\sqrt{162} - \sqrt{12} + \sqrt{18} + \sqrt{75}$$

11. Simplify.

$$4\sqrt{5}(3\sqrt{5} + 8\sqrt{2})$$

12. Solve.

$$3^x = 6361$$

13. Solve.

$$2^{4x+3} = 2048$$

BONUS:

The formula to find the volume of a cube is $V = s^3$, where s is the length of one side. Write a simplified expression that represents the volume of the cube below.

