

Algebra: Chapter 7 Test

Name _____

Show all work and box all final answers.

1. $\left(\frac{a}{b^2}\right)^4 \cdot \left(\frac{b}{a}\right)^2$

2. $\frac{1}{7t^{-3}}$

3. $[(x + 3)^2]^9$

4. $(-7)^9(-7)^2$

5. $[(-5)^3]^8$

6. $\frac{12^2 \cdot 12^4}{12^3}$

7. $(-5m^6)^2 \cdot m^3$

8. $(5g)^{-3}$

9. $\left(\frac{a^2b^{-4}c}{a^{-3}b}\right)^{-2}$

10. $4^{-2} \left(\frac{4^5}{11^0} \right)$

11. $(3f^{-1}g^3)^{-2}$

12. $\left(\frac{2w^3}{v} \right)^3 \cdot \frac{1}{6w^3}$

13. In 2000, Canada mined approximately 10^4 metric tons of uranium. The amount of metric tons of zinc mined in Canada in 2000 was approximately 10^2 times this amount. About how many metric tons of zinc were mined in Canada in 2000?

14. U.S. Postal Service In 2004, the U.S. Postal Service handled 97,926,396 pieces of first class mail and 848,633 pieces of priority mail. Use order of magnitude to estimate how many times greater a volume of first class mail the U.S. Postal Service handled than the volume of priority mail.

15. The world's smallest guitar is only 10^{-6} meter tall. The world's largest guitar is about 10^2 meter tall. How many times taller is the world's largest guitar than the world's smallest guitar?