Chapter 7 Test

Form A

(Page 1 of 3 pages)

Name _____

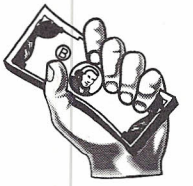
Date _____

1. Simplify. $(-3x^{-2})^3$ 1. _____

2. Simplify. $\frac{6x^2}{y^3} \cdot \frac{y^{-2}x^3}{9x^2}$ 2. _____

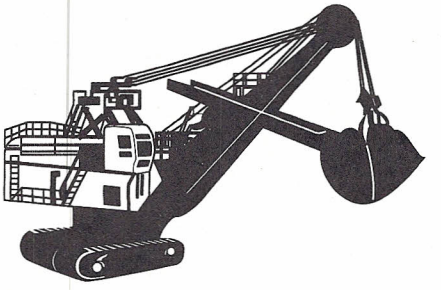
3. Solve for x. $3^3 \cdot 3^x \cdot 3^{x-1} = 3^{12}$ 3. _____

4. ***Balance in an Account*** Find the value of \$1000 deposited for 10 years in an account paying 7% annual interest compounded yearly. 4. _____



5. ***Deposit in an Account*** How much money must be deposited now in an account paying 8% annual interest, compounded quarterly, to have a balance of \$1000 after 10 years? 5. _____

6. ***Depreciation Value*** A piece of equipment costs \$85,000 new but depreciates 15% per year in each succeeding year. Find its value after 10 years. 6. _____



7. Evaluate. $16^{5/4}$ **7.** _____

8. Use a calculator to evaluate $9^{-1/3}$ to three decimal places. **8.** _____

9. ***Geometry*** The volume of a dodecahedron is $V \approx 7.66312a^3$ where a is the length of an edge. Find the edge length of a dodecahedron whose volume is 1000 cubic centimeters. **9.** _____

10. Rewrite $7^{1/5}$ using radical notation. **10.** _____

11. Evaluate $\sqrt[5]{1540}$ to three decimal places using a calculator. **11.** _____

12. Simplify. $\dfrac{25^{1/6}}{25^{2/3}}$ **12.** _____

13. Simplify. $\sqrt[3]{40} + 4\sqrt[3]{5}$ **13.** _____

14. Simplify. $(5^{2/9})^{3/4}$ **14.** _____

15. Solve the equation. $\sqrt[3]{y-2} = 5$ **15.** _____

16. The geometric mean of 10 and x is $5\sqrt{2}$. Find x. **16.** _____

17. Find the distance between the points. **17.** _____
$(-1, 4)$ and $(3, 1)$

In 18–20, refer to the function $g(x) = 2 + \sqrt{x+1}$.

18. What is the domain of $g(x)$? **18.** _____

19. What is the range of $g(x)$? **19.** _____

20. Sketch the graph of $g(x)$. **20.** *Use graph at left.*