

Chapter 8 Test

Form A

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Name _____

Date _____

1. Evaluate $7^{\sqrt{5}/2}$ to three decimal places.

1. _____

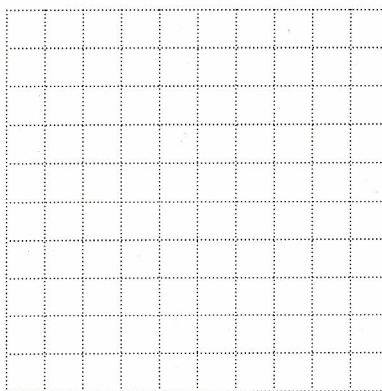
2. **Company Sales** A company had total sales of \$2,300,000 in 1980. Each year between 1980 and 1986 the sales increased by 14%. Approximate to the nearest \$100,000 the sales for 1986.

2. _____



3. Sketch the graph.

$$f(x) = \left(\frac{1}{2}\right)^{x+2}$$



3. Use graph at left.

4. Write $4^{-3} = \frac{1}{64}$ in logarithmic form.

4. _____

5. Evaluate without using a calculator.

$$\log_5 5^{0.3}$$

5. _____

6. Which of the following is *undefined*?

$$\log_4 16, \log_4 1, \log_4(-4)$$

6. _____

7. Evaluate to three decimal places.

$$\log_8 17$$

7. _____

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8. Solve for x . $\log_4 \frac{1}{16} = x$

8. _____

9. Expand the expression. $\log_3(x^{-2}y^3)$

9. _____

10. Condense the expression.

$$\frac{1}{2} \log_5 16 - 3 \log_5 x + 4 \log_5 y$$

10. _____

11. Solve for x .

$$\log_7 3 - \frac{1}{2} \log_7 x = \log_7 \frac{1}{2}$$

11. _____

12. Simplify the expression.

$$\frac{3e^x}{e^{3x}} \cdot \frac{e^{-2x}}{12}$$

12. _____

13. Evaluate to three decimal places.

$$e^{1.35}$$

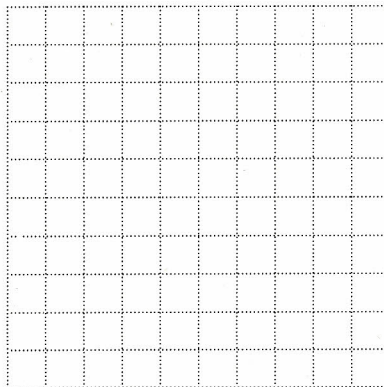
13. _____

14. Is $f(x) = 7e^{-2t}$ an example of exponential growth or decay?

14. _____

15. Sketch the graph of the function.

$$f(x) = \frac{1}{3}e^x - 2$$



15. Use graph at left.

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16. Expand the expression. $\ln \frac{3xy^2}{19}$ 16. _____

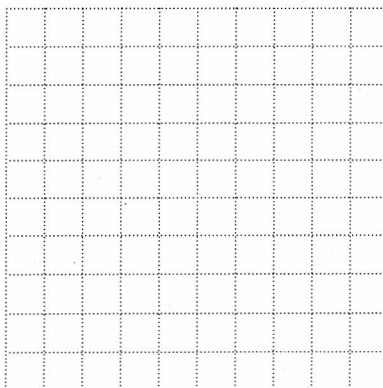
17. Condense the expression. $\frac{1}{3} \ln x - 2 \ln y$ 17. _____

18. Evaluate $5 \ln(7.4)$. 18. _____

19. Evaluate $\log_7 25$ to three decimal places. 19. _____

20. Sketch the graph of the function.

$$f(x) = \ln(x + 3)$$



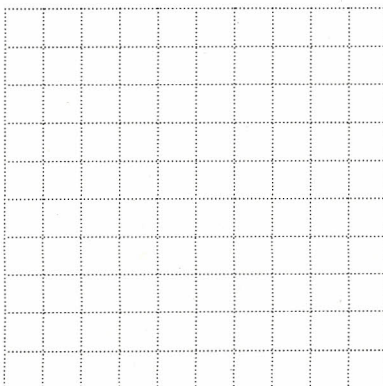
20. Use graph at left.

21. Solve the equation. $35 \log_6 x = 18$ 21. _____

22. **Double the Balance** How long does it take \$100 to double if invested at 6% interest compounded continuously? 22. _____

23. Sketch the graph of the function. Identify the horizontal asymptotes.

$$f(x) = \frac{5}{1 + 4e^{-x}}$$



23. Use graph at left.