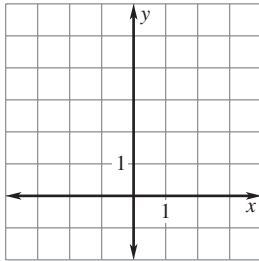


Chapter Test A

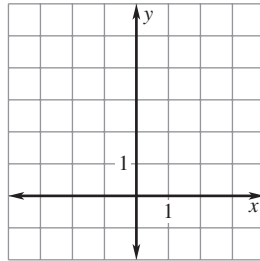
For use after Chapter 8

Graph the function. State the domain and range.

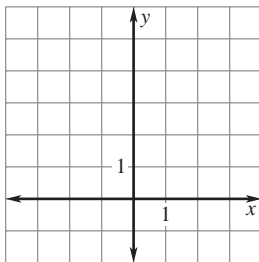
1. $y = 2^x$



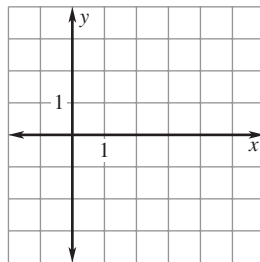
2. $y = 2^{(x-1)} + 1$



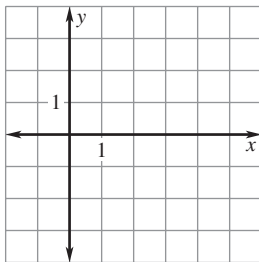
3. $y = \frac{1}{3}e^x$



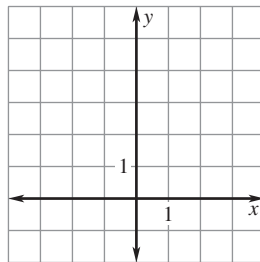
4. $y = \log x$



5. $y = \ln(x - 1)$



6. $y = 2e^{-x}$



Simplify the expression.

7. $(e^3)(e^2)$

8. $(3e)(e^{-2})$

9. $\log 10,000$

10. $\log_3 27$

11. $\frac{e^4}{e^3} \cdot \frac{-3}{e}$

Evaluate the expression without using a calculator.

12. $\log_2 0.5$

13. $\log_{1/2} 4$

14. $\log_3 1$

15. $\ln e^1$

Solve the equation. Check for extraneous solutions.

16. $10^{3x+5} = 10^{x-3}$

17. $\log_3(2x - 1) = 2$

18. $\log_5(4x + 1) = \log_5(2x + 7)$

19. $\log_2(y + 4) + \log_2 y = 5$

Answers

1. Use grid at left. _____

2. Use grid at left. _____

3. Use grid at left. _____

4. Use grid at left. _____

5. Use grid at left. _____

6. Use grid at left. _____

7. _____

8. _____

9. _____

10. _____

11. _____

12. _____

13. _____

14. _____

15. _____

16. _____

17. _____

18. _____

19. _____

Chapter Test A

For use after Chapter 8

20. Tell whether the function $f(x) = 4\left(\frac{3}{2}\right)^x$ represents *exponential growth* or *exponential decay*.

21. Find the inverse of the function $y = \log_5 x$.

Use $\log 5 \approx 0.699$ and $\log 12 \approx 1.079$ to approximate the value of the expression.

22. $\log 25$

23. $\log \frac{1}{12}$

24. Condense the expression $3 \log x + \log 7$.

25. Expand the expression $\ln 3xy$.

26. Use the change-of-base formula to evaluate the expression $\log_5 10$.

27. Find an exponential function of the form $y = ab^x$ whose graph passes through the points (2, 1) and (3, 2).

28. Find a power function of the form $y = ax^b$ whose graph passes through the points (4, 4) and (16, 8).

29. **Car Depreciation** The value of a new car purchased for \$20,000 decreases by 10% per year. Write an exponential decay model for the value of the car. Use the model to estimate the value after one year.

30. **Earning Interest** You deposit \$1000 in an account that pays 6% annual interest compounded continuously. Find the balance at the end of 2 years.

20. _____

21. _____

22. _____

23. _____

24. _____

25. _____

26. _____

27. _____

28. _____

29. _____

30. _____