

Chapter 3: Rational Exponents and Radical Functions

Know How to.....

- Rewrite in exponential form ($2^{1/3}$) and radical form ($\sqrt[3]{2}$)
- Evaluate roots and exponents
- Simplify exponents; know rules
- Add, Subt. Multiply 2 functions; $f(x)$ and $g(x)$
- Composition of functions $f(g(x))$ and $g(f(x))$
- Find the inverse of a function
- Graph $y = \sqrt{x}$ and $y = \sqrt[3]{x}$. Give Domain and Range
- Solve $\sqrt{\quad}$ and $\sqrt[3]{\quad}$ equations

Chapter 4: Exponential and Logarithmic Functions

Know How to.....

- Graph Exponential ($y = 2^x$) and Log ($y = \log_3 x$) Functions
 - Asymptotes and Domain and Range
- Value of e
- Simplify exponents: know rules
- Interest Compounded continuously: $A = Pe^{rt}$
- Evaluate logs
- Expand logs/Condense logs
- Change of Base
- Solve Exponential Equations/ Solve Log Equations

Chapter 9: Trigonometry

Know How to.....

- Find trig functions of triangle. 6 ratios SOH CAH TOA
- Solve for 2 sides of triangle using trig
- Find trig functions of given point (x,y) $\sin = y/r$, $\cos = x/r$, $\tan = y/x$
- Find trig functions of given special angles

Chapter 3: Rational Exponents and Radical Functions

Evaluate.

1. $\sqrt[3]{64}$

2. $125^{2/3}$

3. $8^{5/3}$

4. $(\sqrt[3]{-27})^2$

Simplify.

5. $2^{1/4} \cdot 2^{3/4}$

6. $\sqrt[4]{16x^8y^{12}}$

7. $x^{2/5} \cdot x^{1/5}$

8. $\sqrt[5]{2} \sqrt[5]{8}$

Answer the following if $f(x) = 2x + 9$ and $g(x) = 3x - 1$

9. $f(x) + g(x)$

10. $f(x) - g(x)$

11. $f(x) \cdot g(x)$

12. $f(4)$

13. $g(7)$

14. $f(g(x))$

15. $g(f(x))$

16. $\frac{f(x)}{g(x)}$

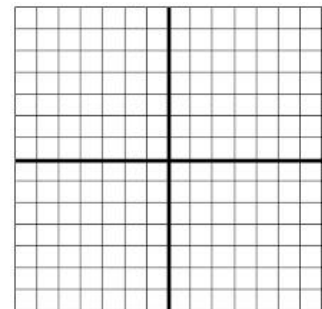
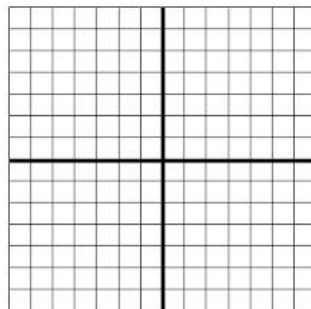
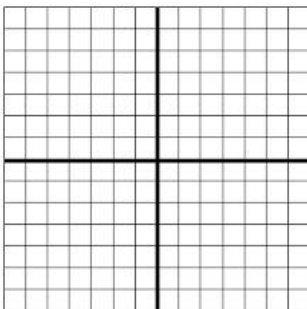
17. $f(g(3))$

Graph. State the domain and range.

18. $y = \sqrt{x - 1} + 3$

19. $y = \sqrt[3]{x + 2} - 5$

20. $y = \sqrt{x}$



Solve the Radical Equation.

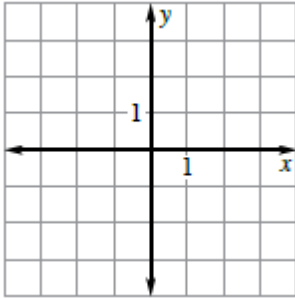
20. $\sqrt{3x + 7} = 4$

21. $\sqrt{x} + 5 = 12$

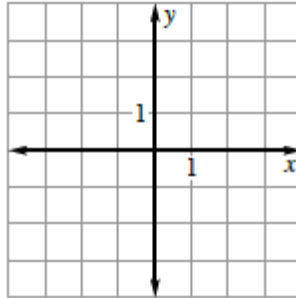
22. $\sqrt[3]{2x + 1} = 3$

CH 4: Graph the function. State the domain and range

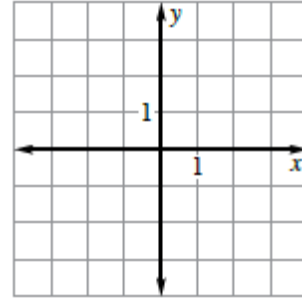
1. $y = 2^x$



2. $y = \left(\frac{3}{4}\right)^x$



3. $y = e^x$



Simplify the expression.

4. $4e^3 \cdot e^5$

5. $(-4e^{2x})^3$

6. $\frac{8e^{5x}}{4e^{2x}}$

7. $\frac{9e^{6x}}{3e^{4x}}$

8. You deposit \$3000 in an account that pays 5% annual interest compounded continuously. What is the balance after 2 years? ($A = P e^{rt}$)

Evaluate the logarithm without using a calculator.

9. $\log_2 8$

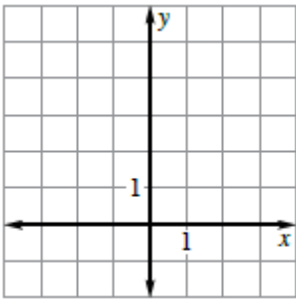
10. $\log_6 1$

11. $\log_5 5$

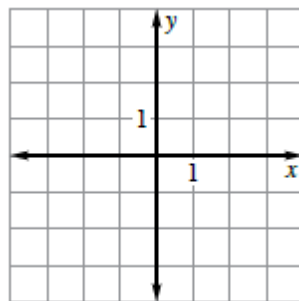
12. $\log_{1/3} 27$

Graph the function. State the domain and range.

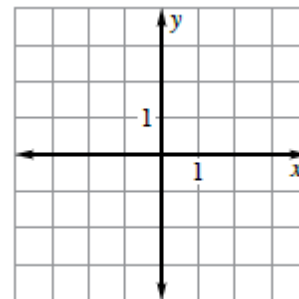
13. $y = \log_5 x$



14. $y = \ln x + 3$



15. $y = \log(x + 1) - 2$



Expand the expression.

16. $\log_3 4x$

17. $\ln 4x^2y^5$

Condense the expression.

18. $\log_5 24 - \log_5 6$

19. $\log_8 6 + 2 \log_8 3$

Use the change-of-base formula to evaluate the logarithm.

20. $\log_4 12$

21. $\log_9 18$

Solve the equation.

22. $3^{x+1} = 27^{x+3}$

23. $e^x = 5$

24. $2^{3x} + 9 = 25$

25. $4^{x+1} - 7 = 14$

26. $\log_6(5x + 8) = \log_6(13x)$

27. $\ln(4x - 2) = \ln(8x)$

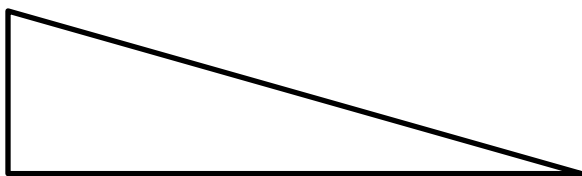
28. $9 \ln x = 54$

29. $\log_3(x + 7) = 3$

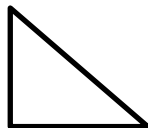
30. $\log_2(x) = 4$

Chapter 9 Trigonometry

31. Find the 6 trig functions of θ .



32. Use Trig to solve for x and y .



33. Use the given point on the terminal side of an angle in standard position to evaluate the three trig functions.

$(2, -1)$

Evaluate the function without a calculator.

34. $\cos 120^\circ$

35. $\cot \frac{\pi}{4}$

36. $\cos \frac{\pi}{2}$

37. $\sin(-150^\circ)$

38. $\sin \pi$