

Quiz 2 Preparation Ch 5.1, 5.2, & 5.3 v01

There will be TEN questions chosen from below.

No Book/No Notes/Yes Calculator 20 minutes

Name _____

Solve the problem.

- 1) Complete the table below by using the table of values for f to complete the table of values for f^{-1} .

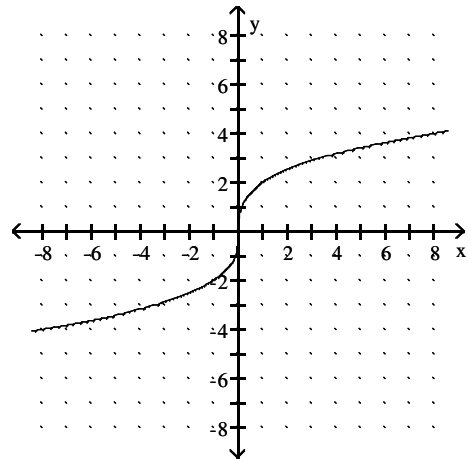
x	$f(x)$	x	$f^{-1}(x)$
1	21	9	
2	17	13	
3	13	17	
4	9	21	

- 2) Complete the table below by using the table of values for f to complete the table of values for f^{-1} .

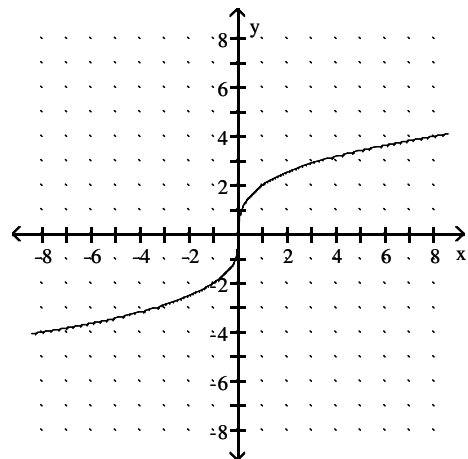
x	$f(x)$	x	$f^{-1}(x)$
1	2	2	
2	5	5	
3	8	8	
4	11	11	

Refer to the graph of the invertible function g to solve the problem.

- 3) Find $g(-8)$



- 4) Find $g^{-1}(2)$



Find the inverse of the given function.

5) $f(x) = x + 5$

6) $f(x) = -3x$

7) $f(x) = 3x - 8$

8) $f(x) = \frac{5x - 7}{3}$

9) $f(x) = 2(x - 5)$

10) $f(x) = x^3 + 6$

Find the logarithm.

11) $\log_5(25)$

12) $\log(10)$

13) $\log_4(1)$

14) $\log_7(\sqrt{7})$

15) $\log_7(7)$

16) $\log_4\left(\frac{1}{16}\right)$

17) $\log_{25}(5)$

18) $\log_2(\log_2(16))$

19) $\log_b(\sqrt{b})$

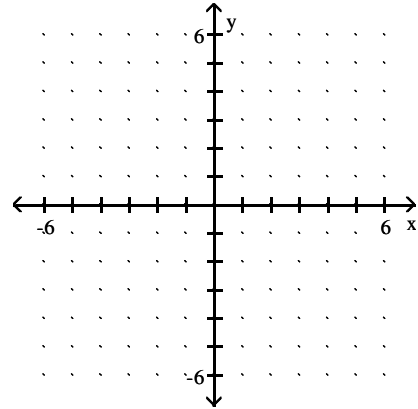
20) $\log_b(b)$

21) $\log_b(1)$

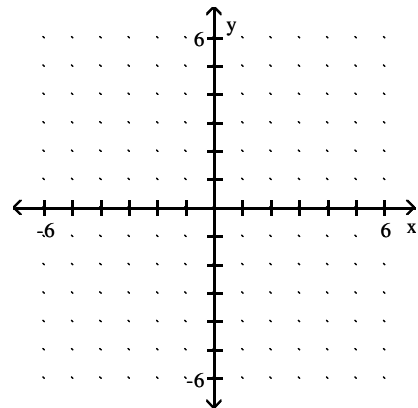
22) $\log_b\left(\frac{1}{b^4}\right)$

Sketch the graph of the function.

23) $y = \log_4(x)$



24) $y = \log_{1/5}(x)$



Write the equation in exponential form. Assume that all constants are positive and not equal to 1.

25) $\log_2(8) = 3$

$$26) \log_8 (2) = \frac{1}{3}$$

$$32) \log (x) = 4$$

$$27) \log_2 \left(\frac{1}{4} \right) = -2$$

$$33) \log_3 (x) = -2$$

$$34) \log_6 (x + 4) = 3$$

Write the equation in logarithmic form. Assume that all constants are positive and not equal to 1.

$$28) 6^3 = 216$$

$$35) \log_2 (x + 2) = -1$$

$$29) e^z = y$$

$$36) \log_3 (x + 4) = -2$$

Solve.

$$30) \log_4 (x) = 3$$

$$37) \log_2 (-6 - 5x) = 2$$

$$31) \log_3 (x) = 1$$

$$38) \log(5x + 8) = 1$$

$$44) \log_x(4) = 2$$

$$39) 4\log_{256}(x) + 3 = 4$$

Solve. Round any approximate solution to the fourth decimal place.

$$45) 4^x = 16$$

$$40) \log_2(\log_2(y)) = 1$$

$$46) 2^{2x} + 1 = 8$$

$$41) \log_9(x^2) = 4$$

$$47) 2^{3x} - 1 = 32$$

$$42) \log_x(27) = 3$$

$$48) 2^x + 6 = 6$$

$$43) \log_x(81) = 4$$

$$49) 4^x + 6 = 3$$

$$50) 2^{8x} = 3$$

$$51) 5^x + 8 = 2$$

$$52) 8(4)^x = 49$$

Solve the problem.

55) Solve $ab^{cx+d} + k = h$ for x . Assume that $b > 0$, $b \neq 1$, and that the constants have values for which the equation has exactly one real number solution.

56) Solve $ab^{cx-d} = k$ for x . Assume that $b > 0$, $b \neq 1$, and that the constants have values for which the equation has exactly one real number solution.

Solve the equation. Round the solution to four decimal places, if necessary.

$$53) 4^x - 3 = 51 - 4(4^x)$$

$$54) 3^{6x} \cdot 3^{9x} + 9 = 108$$

Answer Key

Testname: QUIZ 3PREPARATION CH 5.1, 5.2, & 5.3

1)

x	f(x)	x	f ⁻¹ (x)
1	21	9	4
2	17	13	3
3	13	17	2
4	9	21	1

2)

x	f(x)	x	f ⁻¹ (x)
1	2	2	1
2	5	5	2
3	8	8	3
4	11	11	4

3) -4

4) 1

5) $f^{-1}(x) = x - 5$

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

7) $f^{-1}(x) = \frac{x+8}{3}$

8) $f^{-1}(x) = \frac{3x+7}{5}$

9) $f^{-1}(x) = \frac{1}{2}x + 5$

10) $f^{-1}(x) = \sqrt[3]{x-6}$

11) 2

12) 1

13) 0

14) $\frac{1}{2}$

15) 1

16) -2

17) $\frac{1}{2}$

18) 2

19) $\frac{1}{2}$

20) 1

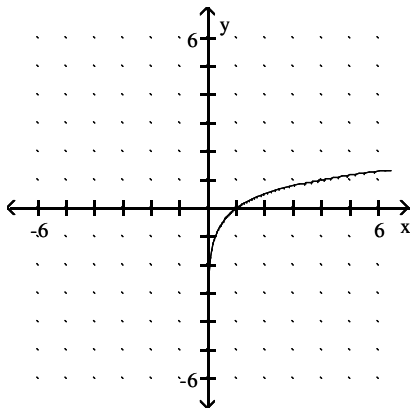
21) 0

22) -4

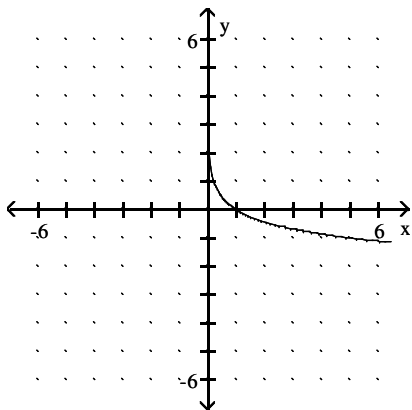
Answer Key

Testname: QUIZ 3PREPARATION CH 5.1, 5.2, & 5.3

23)



24)



25) $2^3 = 8$

26) $8^{1/3} = 2$

27) $2^{-2} = \frac{1}{4}$

28) $\log_6(216) = 3$

29) $\log_e(y) = z$

30) 64

31) 3

32) 10,000

33) $\frac{1}{9}$

34) 212

35) $-\frac{3}{2}$

36) $-\frac{35}{9}$

37) -2

38) $\frac{2}{5}$

39) 4

40) 4

41) 81, -81

Answer Key

Testname: QUIZ 3PREPARATION CH 5.1, 5.2, & 5.3

42) 3

43) 3

44) 2

45) 2

46) 1

47) 2

48) -3.4150

49) -5.2075

50) 0.1981

51) -7.5693

52) 1.3074

53) 1.7165

54) -0.3159

$$55) x = \frac{\log\left(\frac{h-k}{a}\right) - d \log(b)}{c \log(b)}$$

$$56) x = \frac{\log\left(\frac{k}{a}\right) + d \log(b)}{c \log(b)}$$