PRINTABLE VERSION

Quiz 1

You scored 0 out of 100

Question 1

You did not answer the question.

Determine whether or not the given function is one-to-one and, if so, find the inverse. If f has an inverse, give the domain of f^{-1}.

$$f(x) = 2 - x^2$$

a) $f^{-1}(x) = -\sqrt{x-2}$; domain: $(-\infty, 1)$

b) $f^{-1}(x) = 1 - 2\sqrt{x}$; domain: $(0, \infty)$

c) $f^{-1}(x) = \sqrt{x-2}$; domain: $(2, \infty)$

d) *Not one-to-one*

e) $f^{-1}(x) = \sqrt{x-2}$; domain: $(-\infty, \infty)$

Question 2

You did not answer the question.

Determine whether or not the given function is one-to-one and, if so, find the inverse. If f has an inverse, give the domain of f^{-1}.

$$f(x) = x^5 + 2$$

a) $f^{-1}(x) = \sqrt{x-2}$; domain: $(-\infty, 2)$

b) $f^{-1}(x) = (x-2)^5$; domain: $(0, \infty)$

c) *Not one-to-one*

d) $f^{-1}(x) = (x-2)^{1/5}$; domain: $(-\infty, \infty)$

e) $f^{-1}(x) = (x-2)^{1/5}$; domain: $(2, \infty)$

Question 3

You did not answer the question.

Determine whether or not the given function is one-to-one and, if so, find the inverse. If f has an inverse, give the domain of f^{-1}.

$$f(x) = 3x^{5/11}$$

a) $f^{-1}(x) = \frac{1}{3}x^{11/5}$; domain: $(-\infty, \infty)$

b) *Not one-to-one*

c) $f^{-1}(x) = \left(\frac{1}{3}x\right)^{5/11}$; domain: $(0, \infty)$

d) $f^{-1}(x) = \left(\frac{1}{3}x\right)^{11/5}$; domain: $(0, \infty)$

e) $f^{-1}(x) = \left(\frac{1}{3}x\right)^{11/5}$; domain: $(-\infty, \infty)$

Question 4

You did not answer the question.

Determine whether or not the given function is one-to-one and, if so, find the inverse. If f has an inverse, give the domain of f^{-1}.

$$f(x) = (1 + 2x^2)^5$$

a) $f^{-1}(x) = (1 + 2x^2)^{1/5}$; domain: $(0, \infty)$

b) *Not one-to-one*

c) $f^{-1}(x) = \sqrt{\frac{1}{2}x^{1/5} - \frac{1}{2}}$; domain: $(0, \infty)$

d) $f^{-1}(x) = (1 + 2x^2)^{1/5}$; domain: $(-\infty, \infty)$

e) $f^{-1}(x) = \sqrt{\frac{1}{2}x^{1/5} - \frac{1}{2}}$; domain: $(-\infty, \infty)$

Question 5

You did not answer the question.

Determine whether or not the given function is one-to-one and, if so, find the inverse.

$$f(x) = \frac{4}{3}\cos(x)$$
$$x \in \left[-\frac{1}{2}\pi, \frac{1}{2}\pi\right]$$

a) $f^{1}(x) = \arccos\left(\frac{3}{4}x\right)$

b) $f^{1}(x) = \sec\left(\frac{3}{4}x\right)$

c) *Not one-to-one*

d) $f^{1}(x) = \frac{4}{3}\sin(x)$

e) $f^{1}(x) = \frac{4}{3}\sec(x)$

Question 6

You did not answer the question.

Determine whether or not the given function is one-to-one and, if so, find the inverse.

$$f(x) = 6x + \frac{7}{x}$$

a) *Not one-to-one*

b) $f^{1}(x) = -6x - \frac{7}{x}$

c) $f^{1}(x) = \frac{6}{x} - 7x$

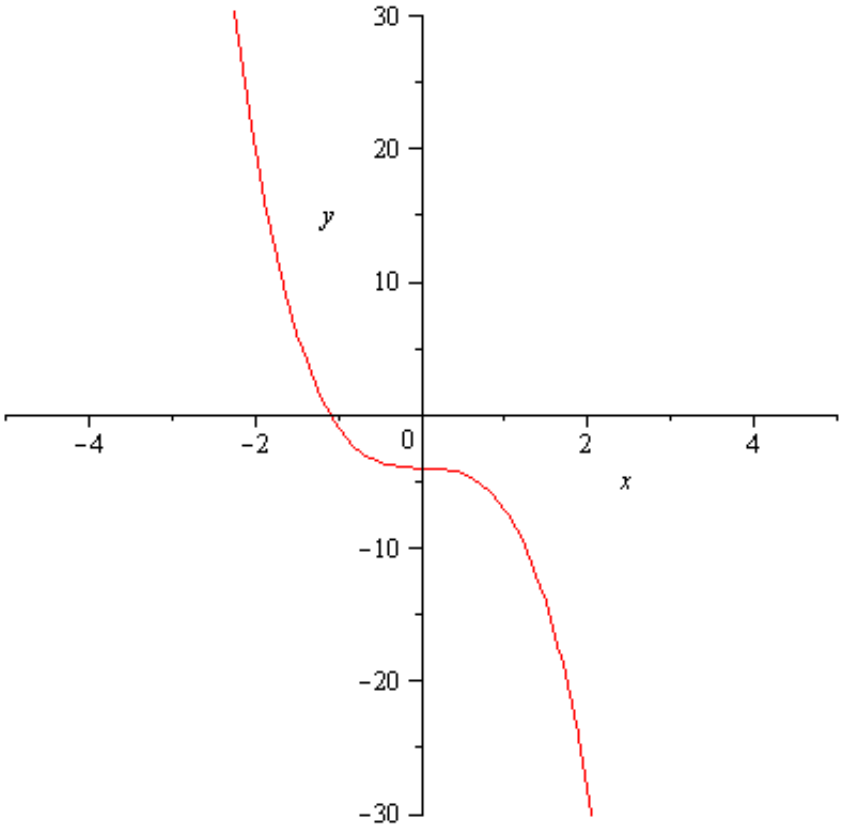
d) $f^{1}(x) = -\frac{1}{12}x - \frac{1}{12}\sqrt{x^2 - 168}$

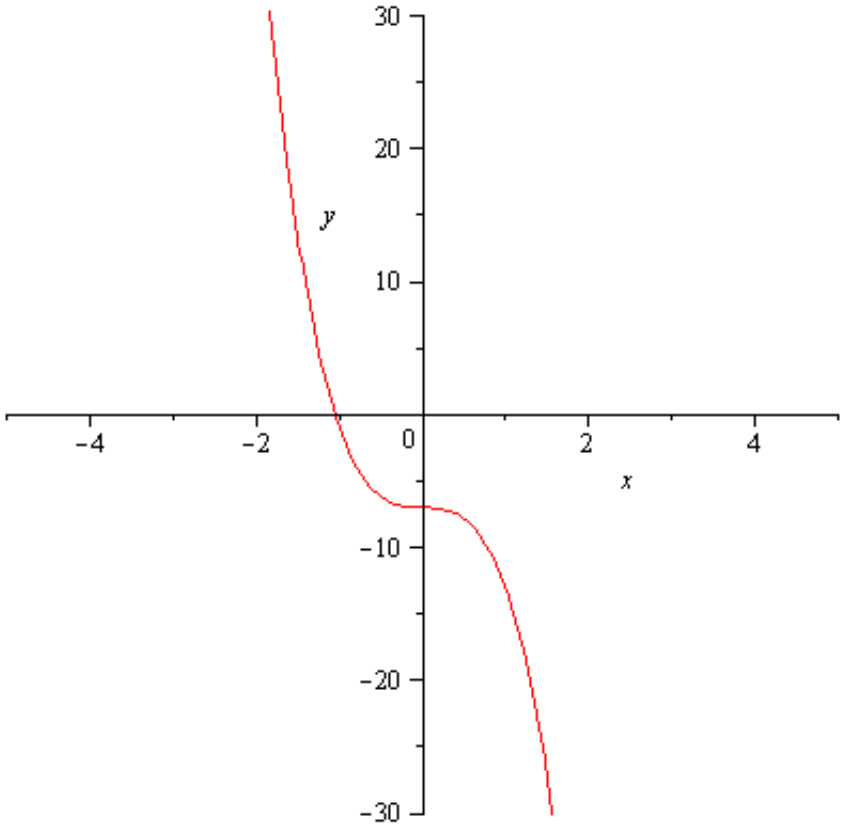
e) $f^{1}(x) = \frac{1}{12}x + \frac{1}{12}\sqrt{x^2 - 168}$

Question 7

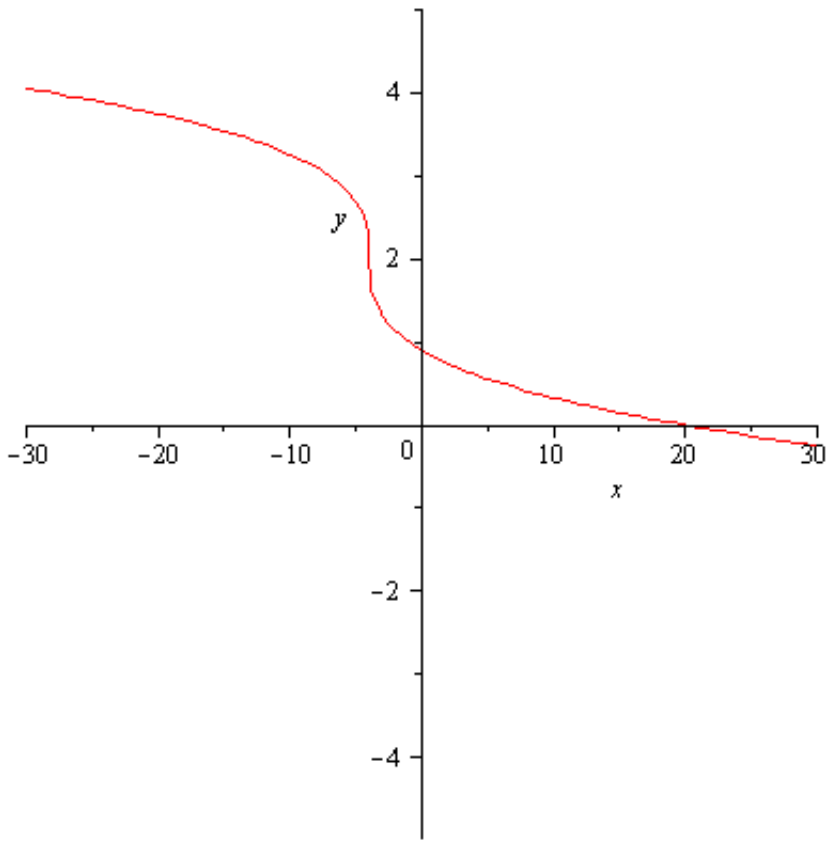
You did not answer the question.

Which of the following represents the graph of the inverse of the given graph?

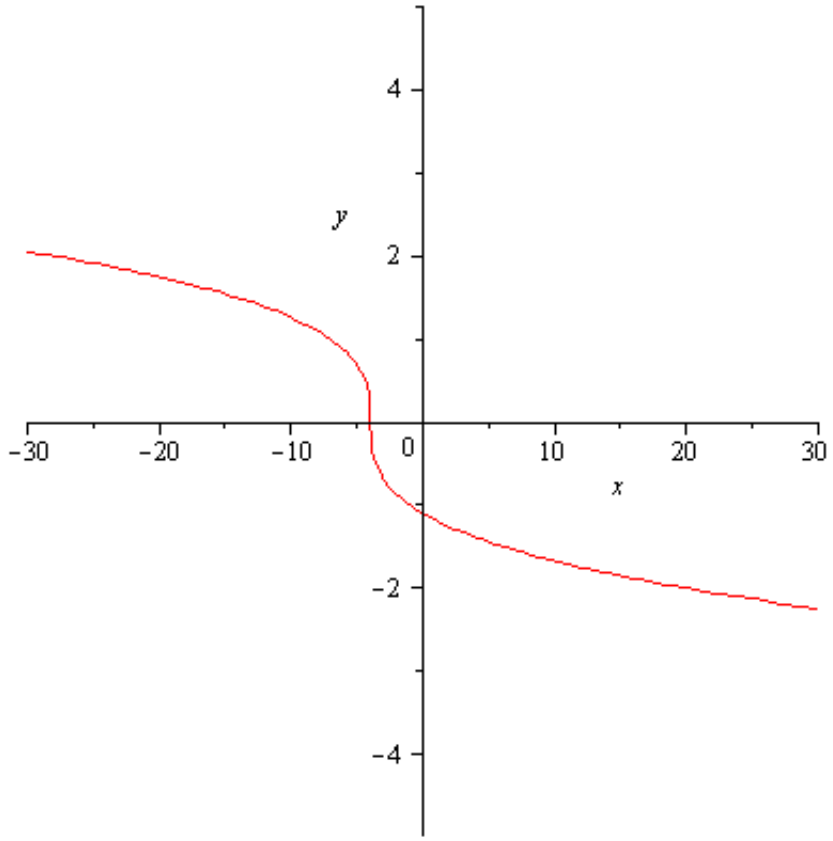




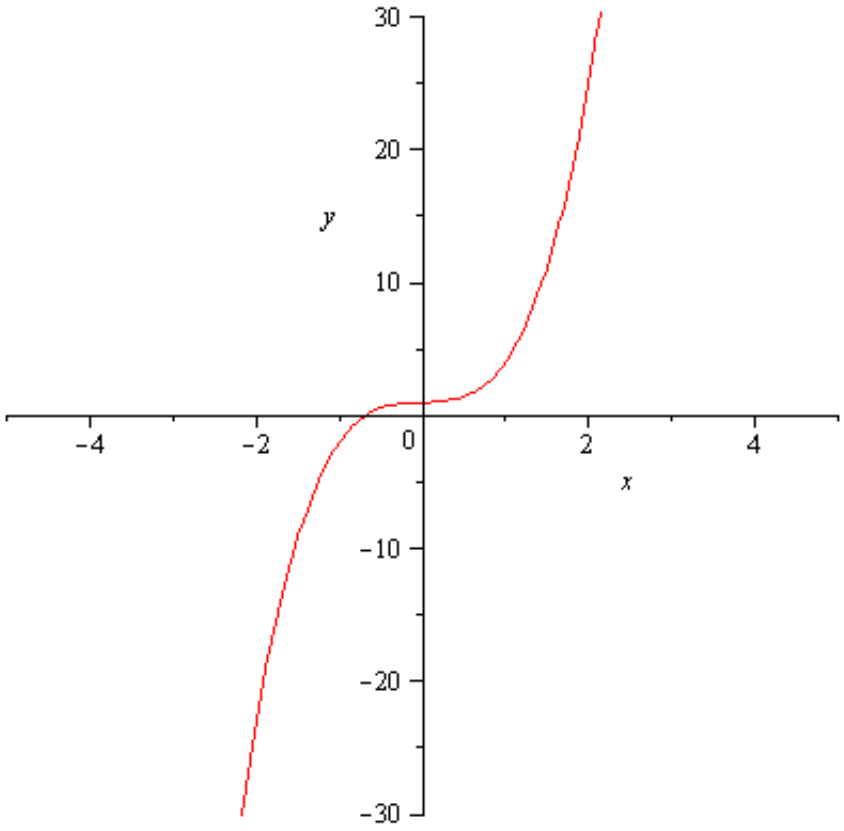
a)



b)



c)



d)

e) *The given function is not one-to-one.*

Question 8

You did not answer the question.

Given the following function, with k as a constant, find the values of k for which f is one-to-one.

$$f(x) = \frac{1}{3}x^3 + 8x^2 + kx$$

a) $8 \leq k$

b) $64 \leq k$

c) $-64 \leq k$

d) $k \leq \frac{1}{64}$

e) $k \leq -\frac{1}{64}$

Question 9

You did not answer the question.

Suppose that f has an inverse and $f(5) = 6, f'(5) = 2/3$. What is $(f^{-1})'(6)$?

a) 3

b) $\frac{3}{2}$

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

d) $\frac{2}{3}$

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

Question 10

You did not answer the question.

Suppose that the given function f is differentiable, has an inverse and that $f(1) = -7$. Find $(f^{-1})'(-7)$.

$$f(x) = -4 - 2x - x^3$$

a) $\frac{1}{4}$

b) $-\frac{2}{5}$

c) $-\frac{1}{5}$

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

e) $-\frac{1}{10}$

Question 11

You did not answer the question.

Suppose that the given function f is differentiable, has an inverse and that $f(9) = 30$. Find $(f^{-1})'(30)$.

$$f(x) = 2x + 4\sqrt{x}$$
$$x > 0$$

a) $\frac{3}{4}$

b) $\frac{3}{8}$

c) $-\frac{3}{11}$

d) $\frac{3}{16}$

e) $-\frac{3}{4}$

Question 12

You did not answer the question.

Suppose that the given function f is differentiable, has an inverse and that $f(\frac{3}{2}\pi) = \frac{1}{2}\pi$. Find $(f^{-1})'(\frac{1}{2}\pi)$.

$$f(x) = x - \pi + \cos(x)$$
$$0 < x < 2\pi$$

a) $\frac{1}{4}$

b) $-\frac{1}{2}$

c) 1

d) -1

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

Question 13

You did not answer the question.

Use the properties of logarithms and the table given below to estimate ln(56).

n	$\ln n$	n	$\ln n$
1	0.00	6	1.79
2	0.69	7	1.95
3	1.10	8	2.08
4	1.39	9	2.20
5	1.61	10	2.30

a) 3.83

b) 4.03

c) 4.06

d) 3.63

e) 4.43

Question 14

You did not answer the question.

Use the properties of logarithms and the table given below to estimate ln($\sqrt[4]{5}$).

n	ln n	n	ln n
1	0.00	6	1.79
2	0.69	7	1.95
3	1.10	8	2.08
4	1.39	9	2.20
5	1.61	10	2.30

a) 2.39

b) 2.19

c) 2.59

d) 1.79

e) 2.74

Question 15

You did not answer the question.

Estimate:

$$\ln(2.1) = \int_1^{2.1} \frac{1}{t}\,dt$$

Using the approximation 1/2[$L_f(P) + U_f(P)$] with $P = \{1 = 10/10, 11/10, 12/10, 13/10, 14/10, 15/10, 16/10, 17/10, 18/10, 19/10, 20/10, 21/10 = 2.1\}$.

a) 0.769

b) 1.43

c) 1.49

d) 0.743

e) 0.716

Question 16

You did not answer the question.

Taking ln(5) is approximately 1.61, use differentials to estimate ln(5.1).

a) 1.71

b) 1.63

c) 1.75

d) 1.58

e) 1.55

Question 17

You did not answer the question.

Taking ln(5) is approximately 1.61, use differentials to estimate ln(5.3).

a) 1.75

b) 1.67

c) 1.79

d) 1.72

e) 1.59

Question 18

You did not answer the question.

Solve the equation for x.

$$\ln(x) = 1$$

a) e^3

b) e^2

c) $\frac{1}{e}$

d) 1

e) e

Question 19

You did not answer the question.

Solve the equation for x.

$$\frac{1}{2}\ln(x) = \ln(2x - 10)$$

a) 3

b) $\frac{25}{4}$

c) 4 or $\frac{25}{4}$

d) 4

e) -4 or $-\frac{25}{4}$

Question 20

You did not answer the question.

Solve the equation for x.

$$\ln((2x + 3)(x + 10)) = 2\ln(x + 10)$$

a) 6

b) 7

c) 5

d) 9

e) 10