

Class Name : Lacoste College Algebra Fall 2019

Student Name : _____

Instructor Name : Master Templates

Instructor Note : Complete this test by yourself using a pencil. Do not use your textbook, notes or any Internet-connected device. You may use a scientific calculator. You have eighty-five (85) minutes to complete this test. Circle your final answer(s).

Question 1 of 20

Solve the inequality for *v*.

$$7v - 35 \le -4(2 - 4v)$$

Simplify your answer as much as possible.

Question 2 of 20

For each of the following equations, determine whether *y* is a function of *x*.

$$x = -2y$$

• Function • Not a function

$$y = 4x$$

• Function • Not a function

$$x + 4y = 8$$

• Function • Not a function

$$x = 5y^2 - 1$$

• Function • Not a function

Question 3 of 20

The graph of the relation H is shown below.



Give the domain and range of H. Write your answers using set notation.

Question 4 of 20

Calculate the distance between the points N = (-1, -1) and J = (6, -9) in the coordinate plane. Give an exact answer (not a decimal approximation).



Question 5 of 20

The number of bacteria in a culture increases rapidly. The table below gives the number N(t) of bacteria at a few times *t* (in hours) after the moment when N = 1000.

Time <i>t</i> (hours)	Number of bacteria $N\left(t ight)$
0	1000
3.1	1589
6.2	2612
12.4	4100
15.5	6425

(a) Find the average rate of change for the number of bacteria from 0 hours to 6.2 hours.

_____ bacteria per hour

(b) Find the average rate of change for the number of bacteria from 12.4 hours to 15.5 hours.

____ bacteria per hour

Question 6 of 20

Graph the solution to the inequality on the number line.

$$\left|3u+3\right| \ge 6$$



Question 7 of 20

Solve for *u*.

 $-6\left|u+3\right| = -60$

Question 8 of 20

For each graph below, state whether it represents a function.



Question 9 of 20

Find an equation of the circle whose diameter has endpoints (-1, -6) and (5, -4).

Question 10 of 20

Solve the inequality for y.

$$2 \le 14 - \frac{4}{3}y$$

Simplify your answer as much as possible.

Question 11 of 20

The graph of a quadratic function with vertex (1, -3) is shown in the figure below. Find the domain and the range.



Write the domain and range using interval notation.



range = _____

Question 12 of 20

Fill in the blank to make the expression a perfect square.

$$y^2 + 12y + \square$$

Question 13 of 20

Solve for *y*, where *y* is a real number.

$$\sqrt{5y+2} = \sqrt{3y+14}$$

Question 14 of 20

Find an equation of the circle that has center (6, -5) and passes through (2, -1).

Question 15 of 20

For each of the following, determine whether the equation defines y as a function of x.

$$3x = y^{2}$$

• Function
• Not a function

$$8 |x| + y = 8$$

• Function
• Not a function

$$x = \frac{2}{y}$$

• Function
• Not a function

$$x^{2} + |y| = 16$$

• Function
• Not a function

Question 16 of 20

The entire graph of the function f is shown in the figure below.

Write the domain and range of f as intervals or unions of intervals.



Question 17 of 20

The function *g* is defined by $g(x) = x^2 + 3$.

Find g(3y).

Question 18 of 20

Give the equation of the circle centered at the origin and passing through the point (0, -5).

Question 19 of 20

Graph the line x = -5.



Question 20 of 20

The credit remaining on a phone card (in dollars) is a linear function of the total calling time made with the card (in minutes). The remaining credit after 21 minutes of calls is \$17.27, and the remaining credit after 43 minutes of calls is \$14.41. What is the remaining credit after 51 minutes of calls?



Practice Exam 2 Version 2 #2 Answers for class Lacoste College Algebra Fall 2019

Question 1 of 20

 $v \ge -3$

Question 2 of 20

x = -2y	Function Not a	function
y = 4x	Function Not a	function
x + 4y = 8	Function Not a	function
$x = 5y^2 - 1$	C Function	function

Question 3 of 20

domain = $\{3, -3, 0\}$ range = $\{2, 3, -3, -1\}$

Question 4 of 20

Distance: $\sqrt{113}$

Question 5 of 20

(a) Find the average rate of change for the number of bacteria from 0 hours to 6.2 hours.
260 bacteria per hour
(b) Find the average rate of change for the number of bacteria from 12.4 hours to 15.5 hours.
750 bacteria per hour

Question 6 of 20



Question 7 of 20

u = 7, -13

Question 8 of 20



Question 9 of 20

$$(x-2)^2 + (y+5)^2 = 10$$

Question 10 of 20

 $9 \ge y$

Question 11 of 20

domain: $(-\infty, \infty)$ range: $(-\infty, -3]$

Question 12 of 20

$$y^2 + 12y + 36$$

Question 13 of 20

$$y=6$$

Question 14 of 20

$$(x-6)^2 + (y+5)^2 = 32$$

Question 15 of 20

$3x = y^2$	C Function
$8 \left x \right + y = 8$	Function Not a function
$x = \frac{2}{y}$	Function Not a function
$x^2 + y = 16$	○ Function

Question 16 of 20

domain = $(-5, 1) \cup [2, 5)$ range = [-4, 3)

Question 17 of 20

$$g(3y) = 9y^2 + 3$$

Question 18 of 20

$$x^2 + y^2 = 25$$

Question 19 of 20



Question 20 of 20

\$13.37