Exam

Name______________________________

Each problem is worth 8.33 points each. Accompanying steps must be provided in order to receive full credit for an answer.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

For each equation, find the missing value in the ordered pairs.

1) \(5x + y = -42\) \((\quad, 3), (\quad, 168), (\quad, -42)\) \hspace{1cm} 1) ____________

Graph the linear equation by finding and plotting its intercepts.

2) \(-3x - 18y = 18\) \hspace{1cm} 2) ____________

Find the slope of the line containing the two points.

3) \((2, -3); (-5, 6)\) \hspace{1cm} 3) ____________
Solve the problem.

4) To the nearest dollar, the average tuition at a public four-year college was $3031 in 1997 and $3208 in 1998. Use the ordered pairs (1997, $3031) and (1998, $3208) to find and interpret the slope of the line representing the change in tuition (to the nearest dollar per year).

Find the equation of the line with the given slope and intercept.

5) Slope -6; y-intercept is -7

Solve the problem.

6) A truck rental company rents a moving truck one day by charging $35 plus $0.11 per mile. Write a linear equation that relates the cost y, in dollars, of renting the truck to the number x of miles driven. What is the cost of renting the truck if the truck is driven 210 miles?

Find the equation of the line described. Write the equation in slope-intercept form, if possible.

7) (-10, -74) and (5, 31)
Solve the problem.

8) The gas mileage, $y$, of a compact car is related to the speed, $x$, at which the car is driven between speeds of 40 mph and 90 mph. For example, from the graph we see that the gas mileage for the compact car is 45 miles per gallon if the car is driven at a speed of 40 mph.

![Graph of Gas Mileage](image)

The linear equation $y = -\frac{1}{2} x + 65$ relates gas mileage, $y$, to the speed of the car, $x$. Interpret the slope.

Find the equation of the line that has the given properties. Write the equation in slope-intercept form, if possible.

9) Contains $(5, 8)$; parallel to $2x - 5y = -9$
Graph the inequality.
10) \(2x + y \leq -5\)

Provide an appropriate response.
11) Determine whether the lines are parallel, perpendicular, or neither.
   \(L_1: 8x - y = -10\)
   \(L_2: y = \frac{1}{8}x + 15\)

12) Given the linear equation \(5y = -3x + 19\), find
   (a) the slope of a line perpendicular to the given line.
   (b) the slope of a line parallel to the given line.
Solve the problem.

13) Jason bought $x$ rose plants and $y$ sunflower plants for his garden. Rose plants cost $7 each, and sunflower plants cost $15 each. If his spending limit was $264, write an inequality to show the possible combinations of rose plants and sunflower plants he could have bought. Do not solve the inequality.
Answer Key
Testname: TEST2

1) (-9, 3), (-42, 168), (0, -42)
2) (0, -1), (-6, 0)

3) \(-\frac{9}{7}\)

4) tuition increased $177 per year
5) \(y = -6x - 7\)
6) \(y = 0.11x + 35; \$58.10\)
7) \(y = 7x - 4\)
8) Between speeds of 40 mph and 90 mph, gas mileage decreases 0.5 miles per gallon for each 1 mph increase in speed.
9) \(y = \frac{2}{5}x + 6\)

11) neither
12) (a) \(\frac{5}{3}\)
(b) \(-\frac{3}{5}\)
13) \(7x + 15y \leq 264\)