

Name: _____

UIN: _____

Instructor:: _____

UIC email: _____

- You are expected to abide by the University's rules concerning Academic Honesty.
 - You may *not* use your books, notes, or any electronic device including calculators and cell phones.
 - Show ALL your work. Unsupported answers will not receive credit.
 - Always state a complete answer to the problem.
 - Do not write above the type at the top of any pages. If you do, your work may not be graded in that area, because the scanner may miss it.
 - Please check that all the page numbers on each page of your exam match.
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(1) Solve for x .

$$3x - 5 = -2(x + 10)$$

$$\frac{x - 3}{2} + \frac{4 - x}{3} = 4$$

(2) Solve for W .

$$2W + 2L = P$$

- (3) At a thrift store, all tops are the same price and all pants are the same price. Cora buys five tops and three pants for \$54. Her friend buys three tops and one pant for \$26. What is the price for a top? What is the price for a pant?

- (4) Solve the following absolute value equation.
 $|4x + 1| = 7$

- (5) Solve the following inequality. Graph your solution and write it in interval notation.
 $-3x + 22 \geq 4$

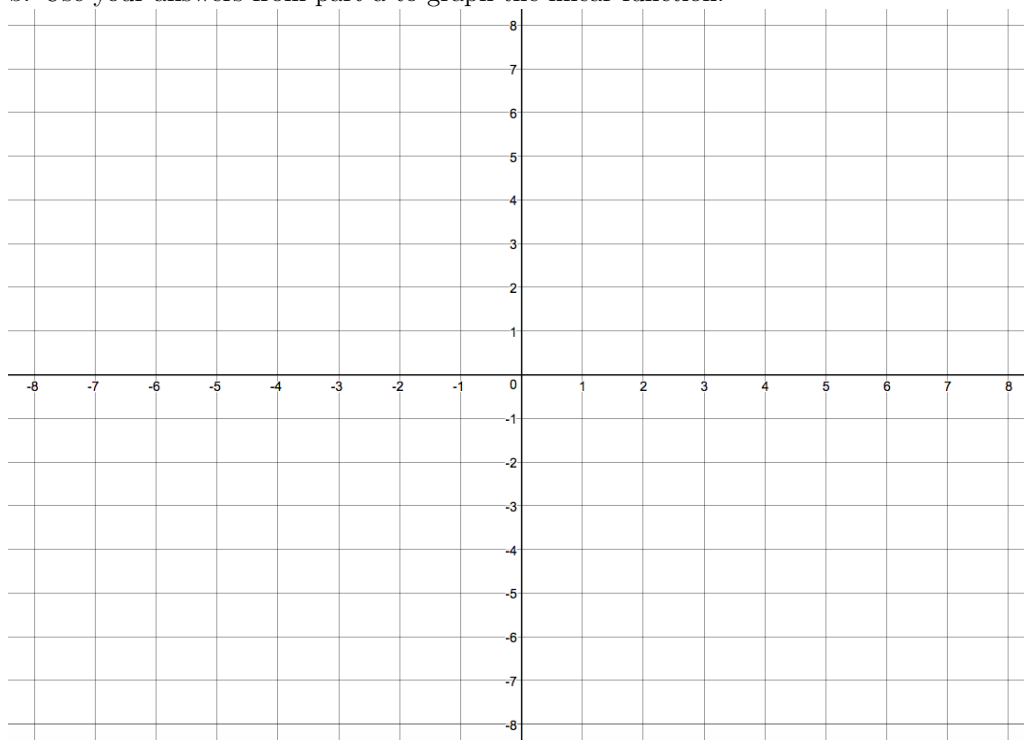
- (6) Given the linear equation $y = \frac{1}{3}x - 2$, answer the following.
- Find the slope, y -intercept, and x -intercept of the function.

slope:

y -intercept:

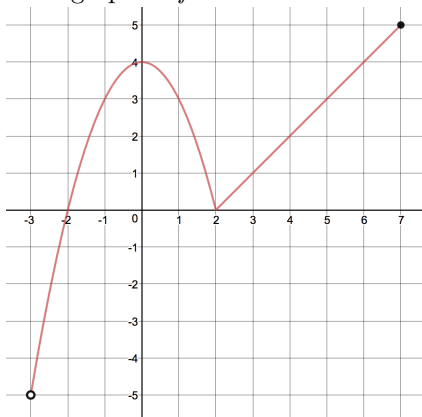
x -intercept:

- Use your answers from part a to graph the linear function.



- Find the equation of the line that is perpendicular to this line, $y = \frac{1}{3}x - 2$, and passes through the point $(1, 1)$.

(7) Use the graph of f below to answer the following.



a. State the domain of f .

b. State the range of f .

c. Find the following.

$$f(-1)$$

$$f(3)$$

d. For what value of x is $f(x) = 5$?

(8) Find the domain of the function.

$$g(x) = \sqrt{x+5}$$

(9) Simplify the following as much as possible. Leave your answers with only positive exponents.

a. $\frac{4u^5p^3}{12u^6p}$

b. $2x^{-2}$

c. $\left(\frac{x^{-3}y^4}{w^3}\right)^2 (x^{10}y^3z^7)$

(10) Factor the following.

a. $xy + 3x + 4y + 12$

b. $3x^2y - 12y$

(11) Solve the following.

a. $x^2 = 5x + 6$

b. $2x^2 - 50 = 0$