

MLC - MTH095 Review Problems for Test 1

This is not a sample test. These problems are designed to get you started on your review for the test. Study the homework from the textbook and your textbook for a more complete review. Work these problems on a separate sheet of paper.

Section 1.1

- Let h be the number of hours you work and let p be the amount of money you earn. Identify the independent and dependent variables.
- Jim left home and walked to the store. Halfway to the store, he stopped to make a phone call. When he finished the call, he continued to the store. Let d be Jim's distance from home and t be time. Sketch a qualitative graph that shows the relationship between the variables.

Section 1.6

- The graph of a relation contains the points $(7, 5)$ and $(7, -3)$. Could the relation be a function? Why?
- Which of the relations below represent functions?

a)

x	y
1	3
2	5
3	7
2	5
5	11

b)

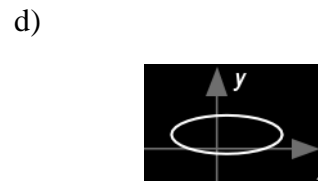
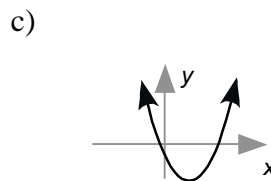
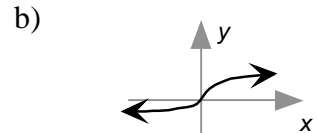
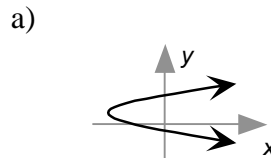
x	y
1	7
2	7
3	7
4	7
5	7

c)

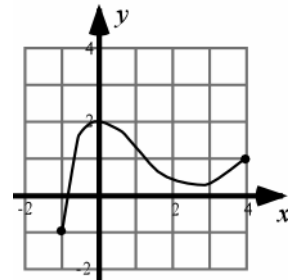
x	y
1	3
2	5
3	7
2	9
5	11

d)

x	y
1	3
2	5
3	7
4	9
5	11



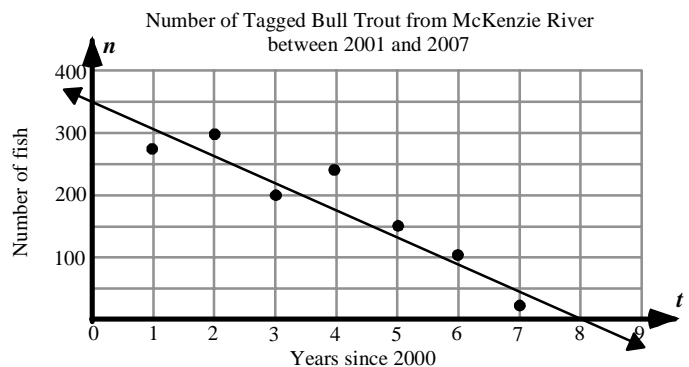
- Determine the domain and range of the graph of the function at the right.



Section 2.1

- The graph at right represents a scattergram and a linear model (line) for a set of fish population data, where n represents the number of tagged fish t years after the year 2000.

- Using the linear model, in what year was the Bull trout population approximately 300?
- What is the n -intercept of the linear model and what does it mean?
- What is the t -intercept of the linear model and what does it mean?
- From the linear model, what would you predict the population of Bull trout will be in the year 2009? Has model breakdown occurred?



Section 2.2

8. The amount of winter wheat exported from the Northwest increased from \$2 million in 1970, to \$102 million in 2004. Let w be the number of dollars worth of wheat exported t years after 1970. Find an equation of a linear model to describe the data.
9. The Internal Revenue Service (IRS) standard mileage rate is used to determine the amount of tax deduction on a tax return. Mileage rates are shown in the table for various years. Let M be the standard mileage rate (in cents per mile) at t years since 1990.
- Make a scattergram of the data by hand and on your calculator.
 - Find an equation for the linear regression line using your calculator. Round values to three decimal places.
 - Draw the regression line and scattergram by hand and on the calculator. Show your calculator results to an instructor.

Year	Standard Mileage Rate (cents per mile)
1998	31.4
1999	32.5
2000	34.5
2001	36.5
2002	36.0
2003	37.5

Section 2.3

10. The table at the right represents the function g :

a) Find $g(4)$

b) Find x so that $g(x) = 13$

x	1	4	7	7	10	13
$g(x)$	5	3.6	9	12	13	19

11. Given the function, $f(x) = \frac{1}{2}x - 2$

a) Evaluate $f(4)$

b) Evaluate $f(-2)$

c) Evaluate $f(6)$

d) Find x when $f(x) = 2$

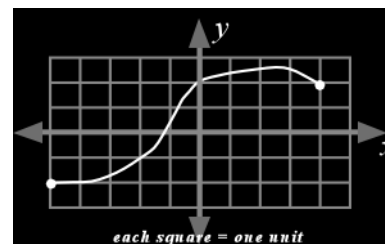
12. Use the graph of f at right to answer the following questions:

a) Find $f(-4)$ and $f(0)$

b) For what values of x is $f(x) = 2$?

c) What is the independent variable?

d) What is the dependent variable?



Section 4.1

13. Simplify each of the following and write without negative exponents.

a) $\frac{5}{x^{-3}}$

b) $-7x^{-2}$

c) $\frac{x^{-7}}{x^2}$

d) $\frac{x^{12}y^{-3}}{x^{-7}y^0}$

Section 4.2

14. Simplify each expression using the laws of exponents. Write the answers with positive exponents.

a. $\left(-4v^{\frac{7}{3}}\right)\left(2v^{-\frac{1}{3}}\right)$

b. $\frac{3x^{\frac{2}{3}}}{7x}$

c. $\left(\frac{t^4}{b^2}\right)^{-\frac{3}{2}}$