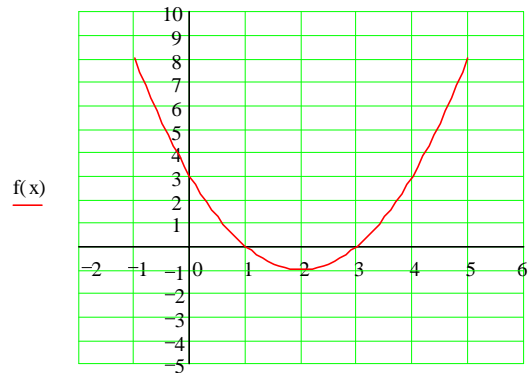


You may use your text and notes and a calculator.. Please write organized - your paper is not just a scratch paper; it is a communication from you to me. Write all your answers in the spaces provided on these two pages.

1) The graph of the function f is plotted below.

b) $f(2) =$ _____

b) Find the solutions, if any, of $f(x) = 3$:



1) Consider the following table:

X	1	2	3	1
Y	4	5	6	7

a) Is y a function of x ? Yes / No , because _____

b) Is x a function of y ? Yes / No , because _____

2) Determine the domain for each of the following functions:

a) $f(x) = \sqrt{x+4}$ domain: _____

b) $f(x) = \frac{1}{\sqrt{x-4}}$ domain: _____

c) $f(x) = \frac{x-4}{x+3}$ domain: _____

3) Solve the linear equation $3(4x-1) - 2x = 6 + 3x$ algebraically. Write your answer as a fraction. Show all work:

$x =$ _____

4) Use the quadratic formula to determine the x-intercept(s) of the function

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

5) The revenue for selling x units of a product is $R(x) = 14.50x$ and the cost to produce x units is $C(x) = 13x + 3717$ (US-\$). (Observe that profit = revenue – cost)

a) What is the cost when 135 units are produced? _____

b) How many units are produced when the cost is \$5,030? _____

c) How many units must the company produce and sell to break even? _____

6) Find the equation of the line through the two points $(-1,4)$ and $(4, 2)$ in the form $y = mx + b$. Show all work!

$y =$ _____

7) A school's enrollment in the year 1985 was 3000 and in 2005 it was 4000 .

a) Write a linear model that describes the student enrollment $E(x)$ as a function of the year x

$E(x) =$ _____

b) Use the linear model from part a) to calculate $E(2015)$ and explain what it means

$E(2015) =$ _____, meaning:

8) The following table gives the average tuition at public two-year colleges for selected years:

Years	1983	1985	1987	1989	1991	1993	1995
Tuition	528	641	739	841	1171	1245	1330

Let x represent the number of years since 1983 and y the tuition in that year.

a) Find the line of best fit for this data set:

$y =$ _____ + _____

b) Use the line to estimate the average tuition in the year 1998 .