

**Math 210: Assignment 3 (25 points)**

**Due by the time you take Exam III – Late Assignments will not be accepted.**

**There are 2 pages to this assignment**

- Do all work on a separate sheet of paper.
- You must show work to receive credit.
- Turn in work in order (#2 should come after #1, etc.)
- You may work in groups of up to 3 people. Points will be taken off, if more than 3 names are on one assignment.

1. (3 points) Simplify as much as possible. Do not leave negative exponents in your answers.

a.  $\left(\frac{12ab^5}{10a^2b^4}\right)^2$

b.  $\left(\left(x^2y^3\right)^2\right)^3$

2. (3 points) Multiply the polynomials. Simplify as much as possible.

a.  $(4x-9)(2x-5)$

b.  $(9x+7)(9x-7)$

3. (2 points) Scientific Notation

a. Convert to Scientific Notation: 0.00000404

b. Convert to Standard Notation:  $5.09 \times 10^6$

4. (5 points) Solve the equations:

a.  $5x - 7 = 43$

b.  $4(2x+7) = 5 - (6x-48)$

c.  $\frac{1}{2}x + \frac{3}{4} = \frac{5}{6}$

d.  $\frac{3}{5}x - 4 = \frac{3}{10}x + \frac{1}{4}$

5. (2 points) The product of four and the difference between eleven and a number is equivalent to the sum of the product of two and number, and seventeen. Find the number.

6. (3 points) A person invests a total of \$14,000 into three bank accounts. The amount in the 2<sup>nd</sup> account is twice the amount in the 1<sup>st</sup> account. The amount in the 3<sup>rd</sup> account is half of the amount in the 1<sup>st</sup> account. The person wants to eventually have \$25,000. How much was initially invested in each account?

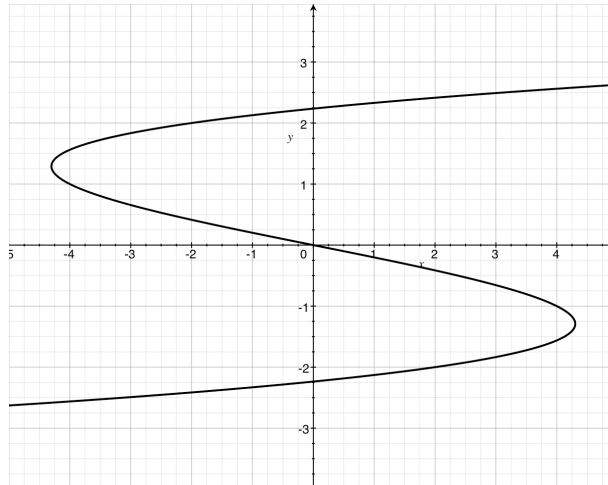
7. (3 points) A car has 78,421 miles on it, on November 1. The car gets 24 miles per gallon.

a. Write an equation that shows the total miles on the car, after November 1, in terms of the number of gallons of gasoline used.

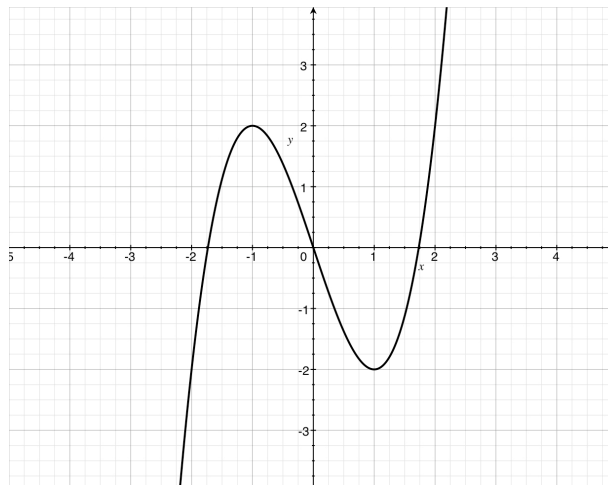
b. On December 1, the car has 80,137 miles. How many gallons were used in the month of November.

8. (3 points) Determine if the following represent functions or not. *You must explain your answers to receive credit.*

a. Graph 1:



b. Graph 2:



c. Table 1:

$x$	1	2	3	2
$y$	-5	4	-3	2

9. (4 points) The points  $(5,-2)$  and  $(-2,-1)$  are on a line.

- Plot the points and sketch the line on a set of axes.
- Find the slope of the line.
- Find the equation of the line.