

Algebra RH - Midterm Extra Practice

- 1) Simplify and write in standard form. $\frac{1}{4}x[(4x^2 + 7x) + (x^3 + 9x - 8)]$
- 2) Solve for v . $K = \frac{mv^2}{2}$
- 3) Solve for x . $\frac{x+3}{16} + \frac{1}{4} = \frac{x+6}{8}$
- 4) Bill spent less than \$26 on a magazine and some composition books. The magazine cost \$4 and each composition book costs \$2.50. Write and solve an inequality to find the maximum number of composition books that can be purchased.
- 5) Samantha purchased some red candies and green candies in the ratio of 3:4. The red candies cost \$0.50 per ounce and the green candies cost \$0.25 per ounce. If the total price of the bag of mixed red and green candies cost \$10.00, how many ounces of each type of candy did Samantha purchase?
- 6) Severe flu cases are increasing in a local hospital. The number of reported cases is shown over the span of a week in the table below.

Day, x	1	2	3	4	5	6	7
Actual Flu Cases, y	13	19	24	27	30	32	34

- (a) Using your calculator, determine the equation of the trend line for this data set. Round all values to the nearest *tenth*.
- (b) Using the regression equation that you obtained from your calculator, predict the number of flu cases on Day 10.
- (c) To the nearest hundredth, state the correlation coefficient. Using this number, describe the correlation between the two variables.
- 7) The mathematics department sponsors Math Family Fun Night every year. In the first year, there were 35 participants. In the third year, there were 57 participants.
- (a) Assuming the number of participants continues to increase at a constant rate, write an equation that can be used to predict the number of participants, y , for any given year, x .
- (b) Based on your equation, how many people are expected to participate in the fifth year?

- 8) Write the inequality of the graph shown at right.

