IB Math Studies 3rd Quarter Study Guide. Work all problems out on a separate sheet of paper. Due: 03/25/10

Topics: Solving equations (linear, quadratic, and systems of equations), probability & statistics, sequences & series, currency conversion, simple interest, logic.

1. Solve $23 = 5 - \frac{2}{3}m$

2. Solve $5(2x - 6) = 7x - 3$

3. Solve the system of equations $\begin{matrix} 5x + 2y = 1 \\ y = 1 - 3x \end{matrix}$

4. Solve the system of equations $\begin{matrix} 3x + 4y = 12 \\ 2x - 3y = -9 \end{matrix}$

5. Solve by factoring , graphing, or quadratic formula: $x^2 - 3x = 18$

6. Solve by factoring , graphing, or quadratic formula: $3x^2 = 20 - 7x$

7. A red die and a blue die are tossed. What is the probability that the red die shows a 3 and the blue die shows a number greater than 3?

8. From 4 green marbles and 7 yellow marbles, three are chosen randomly, without replacement. What is the probability of choosing at least 2 green marbles? What is the probability of choosing exactly one yellow marble and one green marble?

9. An ice cream shop has 31 flavors of ice cream and 10 toppings. A regular sundae has one flavor of ice cream, one topping, and comes with or without whipped cream. How many different ice cream sundaes can be ordered?

10.

Record High Temperatures in Anchorage, Alaska ($^\circ F$)											
Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
52	53	55	56	60	65	66	67	66	61	57	54

a) Which of the measures of central tendency is not a good representation of the data above?
Mean, median, mode, or middle

b) Find the mean, median, mode, and standard deviation of the above data.

11. You invest $3000 in a savings account earning 4.5% interest p.a., compounded quarterly. How much money will you have after 5 years?

12. Calculate the simple interest on a $7000 loan at a rate of 5.25% for 60 months.

13. How much money was borrowed if a rate of 3.75% p.a. simple interest results in a charge of $1250 after 6 years?

14. The population of flies at a camping site was 12. If the population of flies increased at a rate of 15% every week, how many flies were present after 10 weeks?