SIR ARTHUR LEWIS COMMUNITY COLLEGE – DIVISION OF AGRICULTURE

FINAL EXAM SEMESTER II – CERTIFICATE STUDENTS

Course: Elementary Mathematics II – MAT 512   **Date:** 05/2000
Duration: 2 1/2 Hours

Please Answer All Questions

1. Solve the following simultaneous equations.

   a) $3x + y = 13$
      $x + 2y = 12$

   b) $2x + 3y = 7$
      $x + y = 4$

2. In a survey of 100 farmers concerning their brand of weedicide, it was determined that 45 used gramoxone, 30 used roundup, 20 used gramoxil and 5 used no weedicide at all. Use a pie chart to represent this information.

3. A group of layers had the following weights(kg); 2, 2.2, 1.8, 1.9, 2, 2, 2.1, 2.2, 1.9, 2.1, 2.3, 2.2, 2, 1.8, 1.9, 2.3, 2, 2.3, 2. Prepare a frequency table of layer weights and answer the following;

   a) What is the mean layer weight?
   b) What is the modal weight
   c) Draw a histogram to represent the data .

4. Solve the following formulae:

   a) $T = R(WF/H)$. Find H if $R = 5$, $W = 12$, $F = 3$ and $T = 20$

   b) Make B the subject of the formula $A = YN/(G - B)$

5. A surveyor who is 1.6 metres tall is 60 metres away from a tower that is 60 metres high. What is the angle of elevation of the top of the tower from his eyes?

6. A man standing on a 700 metre high mountain observes the angle of depression of a lighthouse to be 45°. What is the distance from the mountain to the lighthouse?

7. Find the equations of the straight lines passing through the following points:
   a) $(1, 1)$ and $(2, 2)$
   b) $(1, 2)$ and $(3, 7)$

8. To spray an area of land, a farmer needs to mix, 3 litres of fungicide in a 1: 30 ratio with water. What is the total volume of spray that will be administered to the land