

VF DAGRI Past Papers

SIR ARTHUR LEWIS COMMUNITY COLLEGE  
Division of Agriculture  
Certificate



Course: Elementary mathematics  
Year: 2005

Duration: two and a half hours  
Semester: 1

#M20

Do All Questions

1. a) Express the following numbers correct to the stated decimal places (dp) and significant figures (sf)
  - i) 0.075538 correct to 3 dp and 4 sf
  - ii) 158861 correct to 2 sf
  - iii) 7.081778 correct to 4 sf and 2 dp
  
- b) A farmer used  $\frac{3}{8}$  of his fertilizer in week 1 and half of the remainder in week 4. The rest of the fertilizer was used in week 7. Calculate the fraction used on the last occasion, week 7.
  
2. a) A vendor buys 3600 bundles of chives for \$2000 and sells 3060 of them at a profit of 30%. The remaining bundles were sold at a loss of 10%.
  - i) What was the total profit made on the 3600 bundles
  - ii) What is the total profit percentage for the 3600 bundles
  
- b) The cost of rearing pigs is divided between labour, feed and capital in the ratio 4:2:1.
  - i) If the cost of rearing a pig is \$175, calculate the cost of feed, labour and capital
  - ii) If the cost of feed is raised rises by 25%, what is the new cost of rearing a pig?
  - iii) What is the new ratio of labour: feed: capital?
  
- c) A landscaper wants to buy a weed eater that costs \$2500. He can purchase it in two different ways. He can take a loan for the full amount at 6% simple interest for 9 months or he can make a 20% deposit on the cash price and pay the remainder in 18 equal monthly installments of \$140. What is the cost of each alternative to the landscaper?
  
3. a) Express each of the following as a single fraction
  - i)  $\frac{x}{4} + \frac{x}{5}$
  - ii)  $\frac{x+2}{2} + \frac{x-4}{3}$
  - iii)  $\frac{3}{x} + \frac{1}{2x}$
  
- b) Solve the following equations for x
  - i)  $x + 4 = 3x + 9$
  - ii)  $9 - 3a = 1$

iii)  $x^2 + 5x = 0$

c) Factorize the following

i)  $6m = 4n - 9km - 6kn$

ii)  $x^2 + 5x$

d) Grade A bananas are sold for \$3x and grade B bananas for \$2x per box. A farmer sells 2 boxes of grade A fruit and 2 boxes of grade B fruit and makes a total of \$100. Write an equation using x to show his total income. Use the equation to solve for x.

4. a) A circular shaped piece of land has a radius of 28 metres .

i) What is the perimeter of the land?

ii) If the land is fenced using 30 metre rolls of fencing, how many rolls are needed to completely fence the land?

iii) What is the area of the land?

iv) If top soil is applied to the entire surface of the land at a depth of 5cm (100 cm = 1 metre), calculate the volume of top soil used.

b) A farmer plans to spray 10,000 square metres of bananas with a pesticide. If it takes 2 men, one minute to spray  $12m^2$ , calculate the time that would be taken to spray the entire plot should he use 4 men.