

King Fahd University of Petroleum and Minerals

Department of Mathematical Sciences

Dr. Raja Latif. Class Test 1 Math 131-06 Chapters 2 & 4, Term 041 Sep - Jan 2004

Time: 30 Minutes Saturday, October 09, 2004

Marks: 50

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|-------|------|---------|----------|--------|-----------|-----------|----------------|---------------|--|--|--|--|--|--|--|--|--|--|--|--|
| Name | | | | | | | | | | | | | | | | | | | | |
| Write | Your | Student | Identity | Number | Correctly | Section # | Class Time | Serial Number | | | | | | | | | | | | |
| | | | | | | 6 | 11 : <i>am</i> | | | | | | | | | | | | | |

NOTE: SHOW COMPLETE SOLUTION WITH ALL STEPS FOR FULL CREDIT.

Q.1. Suppose the cost to produce 10 units of a product is \$ 40 and the cost of 20 units is \$ 70. If cost c is linearly related to output q , find a linear equation relating c and q .

Q2. A woman invested part of \$ 40000 (Forty Thousands) at 12 % and the remainder at 8 %. Her income in one year from these two investments was the same as if she had invested the whole sum at 9 % . How much did she invest at each rate?

Q3. The displacement of an object from a reference point at time t is given by $s = 3.2t^2 - 16t + 28.7$, where s is in meters and t is in seconds.

(a) For what value of t does the minimum displacement occur?

(b) *What* is the minimum displacement of the object from the reference point?

Q.4. (Investment) A man has \$ 7000 to invest. He wants to invest some of it at 8% and the rest at 10%. What is the maximum amount he should invest at 8% if he wants an annual interest income of at least \$600 per year?

Q5. Transportation. A knitting shop orders yarn from three suppliers in Toronto, Montreal, and Ottawa. One month the shop ordered a total of 100 units of yarn from these suppliers. The delivery costs were \$ 80, \$ 50, and \$ 65 per unit for the orders from Toronto, Montreal, and Ottawa, respectively, with delivery costs of \$ 5990. The shop ordered the same amount from Toronto and Ottawa. How many units were ordered from each supplier?