

ID number: _____

University of Somewhere
Some Maths Course
Final Examination

- Unit name: Some Maths Course
- Time allowed: 2 hours
- Marks on paper: 14
- Number of questions: 5
- Exam weight: 50%
- Permitted materials:
 - Non-programmable calculator
 - Translation dictionary

Instructions for candidates:

1. Answer all questions
2. Write your ID number on each page of the paper
3. All answers and working out should be written on the paper
4. If you need extra paper for working, ask the examiner

May 24, 2017

Formula sheet

Euler's Formula:

$$e^{i\pi} + 1 = 0$$

1. Expand the expression $5x(2x + 3y)$ [1mark]

1. _____

2. Expand and simplify $4x(x + 3) - 7(x + 1)$ [1mark]

2. _____

3. Solve $5x + 30 = -10x$ [1mark]

3. _____

4. A sports club is organising the end of season party. Hire of the venue costs \$1000, and the club will pay for the first \$500 of drinks bought from the bar. Food will cost \$20 per person.

(a) Write the linear function for the total cost in dollars, C , in terms of the number of guests, n . [2marks]

(a) _____

(b) What is the gradient of this linear relationship? [1mark]

(b) _____

(c) How much will the party cost if there are [2marks]
i. 20 guests

i. _____

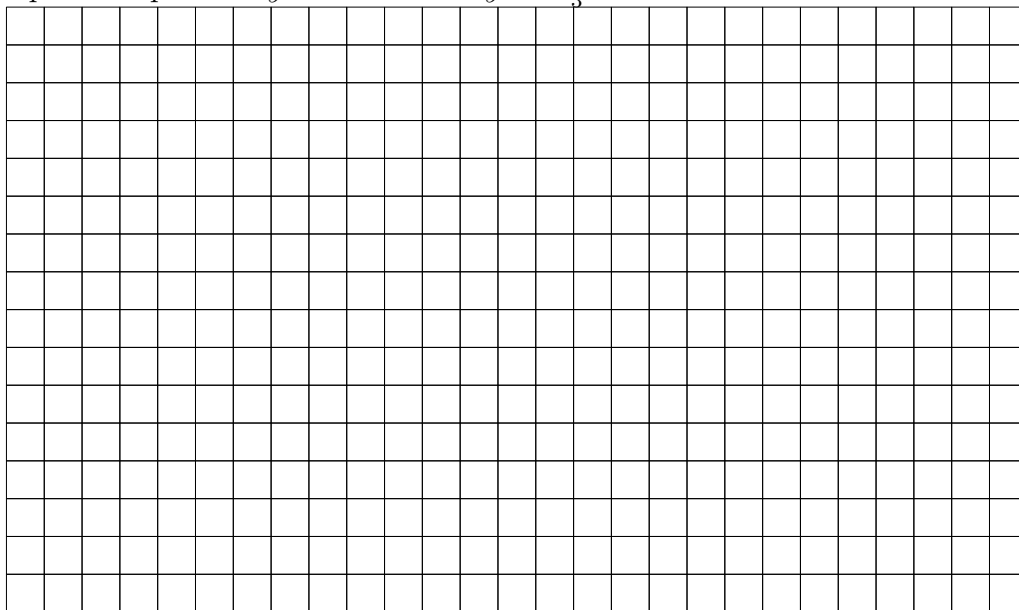
ii. 100 guests

ii. _____

(d) If the club sells tickets for \$40, how many must be sold in order to break even? [1mark]

(d) _____

5. (a) Graph the equations $y = 2x - 2$ and $y = -\frac{1}{3}x + 5$ on the same axes. [3marks]



- (b) Use the graph to solve the simultaneous equations $y = 2x - 2$ and $y = -\frac{1}{3}x + 5$. [2marks]

(b) _____