

MATH1061 — DISCRETE MATHEMATICS
First Semester Examination, June 2001 (continued)

- (b) Find an integer x and an integer y which satisfy the following linear diophantine equation.

$$533x + 117y = 65.$$

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6. (6 marks)

- (a) Does there exist a simple graph with vertices having the following degrees?
4, 4, 4, 3, 3, 3, 1, 1.
Explain your answer carefully.

- (b) (i) A tree with 10 vertices has

edges. (Fill in the box.)

- (ii) A tree has 10 vertices with degrees 1, 1, 1, 1, 1, 1, 2, 2, a , b .
If a , b are 4 or greater, find a and b .