

Question 12**(9 marks)**

The sales manager of a large retail store plans to put the best salesperson as a sales specialist in each of the four departments within the store. Over a period of time and by rotating them through each of the four areas of the store, the sales (\$'000) made by the five people being considered for these positions have been summarised in the table below.

	Computing	Kitchen and laundry	Audio-visual	Furnishing
Thomas	41	33	53	49
Megan	41	33	43	35
Lim	39	27	49	37
Le-Tong	27	33	37	43
Heidi	37	41	39	45

- (a) Use the Hungarian algorithm to determine the allocation of a salesperson to each of the four departments within the store to maximise sales. (4 marks)

- (b) Show the allocation of departments to salespeople in the table below. (1 mark)

Salesperson	Thomas	Megan	Lim	Le-Tong	Heidi
Department					

- (c) Calculate the maximum sales figure determined in part (a). (1 mark)

- (d) After the allocations were made, Lim was dissatisfied and resigned from her job. Determine how this would affect the allocation and maximum sales figure. (3 marks)