

Question 13**(10 marks)**

Chau purchased a brand-new motorcycle valued at \$17 000. Once Chau drove the motorcycle out of the dealer's yard, it immediately depreciated in value by 15%. By the end of the first year, it depreciated a further 5%. After the first year the motorcycle depreciated at a constant rate of 7% per year.

(a)

n (years)	1	2	3	4
Value of the motorcycle (\$)	13 727.50			

(i) Show how the value of the motorcycle at the end of the first year was calculated. (2 marks)

(ii) Complete the remainder of the table. (2 marks)

(b) Determine the percentage by which the motorcycle depreciated in the first year. (2 marks)

(c) Write a recursive rule that represents the amount the motorcycle will be worth at the end of each year, after the first year. (2 marks)

(d) Determine how much the motorcycle will be worth at the end of eight years. (1 mark)

(e) When will the motorcycle be first worth less than \$5000?

(1 mark)