Question 21

An infectious disease is spreading through an isolated community. The total number of patients per day is shown in the table below.

Day	1	2	3	4	5
Number of new patients infected on day *n*	3	9	15	21	27
Total number of infected patients	3	12	27	48	75

Which of the following relationships accurately describes the total number of patients on day n?

A. $t_{n+1} = t_n + 6, t_1 = 3$

B. $t_n = 3n, t_1 = 3$

C. $t_{n+1} = t_n + 3(2n + 1), t_1 = 3$

D. $t_{n+1} = t_n + 3n, t_1 = 3$

E. $t_{n+1} = 3t_n + 9, t_1 = 1$

Question 22

The value of a $40 000 car depreciates by 20% in the first year, then 8% per annum for the next 4 years.

The value of the car after 4 years is closest to

A. $8 000

B. $22 925

C. $24 320

D. $24 918

E. $28 656

Use the following information to answer Questions 23 and 24.

A $25 000 loan for a car is financed over 5 years.

Question 23

The car is financed using hire purchase over 5 years. The flat interest rate is 8% per annum with an initial deposit of 20% required.

The monthly repayment is closest to

A. $409

B. $467

C. $490

D. $583

E. $2 333

Question 24

An alternative to finance the $25 000 loan for the car is using a depreciating balance loan at a rate of 12% per annum, compounding monthly for 5 years.

The total to be paid under this arrangement is closest to

A. $556.11

B. $6935.24

C. $33 367

D. $34 676

E. $40 000

END OF SECTION A