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PURE MATH

ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	ARITHMETIC SEQUENCE
PAPER TYPE:	QUESTION PAPER - 3
TOTAL QUESTIONS	8
TOTAL MARKS	56

Questions

Q1.

In an arithmetic series

- the first term is 16
- the 21st term is 24

(a) Find the common difference of the series.

(3)

(b) Hence find the sum of the first 500 terms of the series.

(4)

(Total for question = 7 marks)

Q2.

In an arithmetic series

- the first term is 10
- the 15th term is 34

(a) Find the common difference of the series.

(2)

(b) Hence find the sum of the first 100 terms of the series.

(4)

(Total for question = 6 marks)

Q3.

In an arithmetic series

- the first term is 3
- the 10th term is 27

(a) Find the common difference of the series.

(2)

(b) Hence find the sum of the 15th terms of the series.

(2)

(Total for question = 4 marks)

Q4.

In an arithmetic series

- the first term is 7
- the 12th term is 21

(a) Find the common difference of the series.

(3)

(b) Hence find the sum of the 20th terms of the series.

(3)

(Total for question = 6 marks)

Q5.

In an arithmetic series

• the first term is 12
• the 8th term is 38

(a) Find the common difference of the series.

(3)

(b) Hence find the sum of the 15th terms of the series.

(2)

(Total for question = 5 marks)

Q6.

A truck has eight gears.
The fastest speed of the truck

• in 1st gear is 35 km h–1
• in 9th gear is 180 km h–1

Given that the fastest speed of the truck in successive gears is modeled by an **arithmetic sequence,**

(a) If the speeds in successive gears are modeled by an arithmetic sequence, find the speed in the 6th gear.

(3)

(b) If the speeds in successive gears are modeled by a geometric sequence, find the speed in the 7th gear.

(4)

(Total for question = 7 marks)

Q7.

A bicycle has six gears.
The fastest speed of the bicycle

- in 1st gear is 15 km h–1
- in 6th gear is 45 km h–1

Given that the fastest speed of the bicycle in successive gears is modeled by an **arithmetic sequence,**

(a) If the speeds in successive gears are modeled by an arithmetic sequence, find the speed in the 4th gear.

(5)

(b) If the speeds in successive gears are modeled by a geometric sequence, find the speed in the 5th gear.

(4)

(Total for question = 9 marks)

Q8.

A car has five gears.
The fastest speed of the bicycle

- in 1st gear is 30 km h–1
- in 5th gear is 150 km h–1

Given that the fastest speed of the car in successive gears is modeled by an **arithmetic sequence,**

(a) If the speeds in successive gears are modeled by an arithmetic sequence, find the speed in the 3rd gear.

(3)

(b) If the speeds in successive gears are modeled by a geometric sequence, find the speed in the 4th gear.

(3)

(Total for question = 6 marks)

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