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PURE MATH

ALGEBRA AND FUNCTION

Level & Board	EDEXCEL (A-LEVEL)
TOPIC:	ARITHMETIC SEQUENCE
PAPER TYPE:	QUESTION PAPER - 1
TOTAL QUESTIONS	8
TOTAL MARKS	56

Questions

Q1.

A car has six forward gears.
The fastest speed of the car

- in 1st gear is 28 km h–1
- in 6th gear is 115 km h–1

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

(a) Find the fastest speed of the car in 3rd gear.

(3)

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

(b) Find the fastest speed of the car in 5th gear.

(3)

(Total for question = 6 marks)

Q2.

A bike has five forward gears.
The fastest speed of the bike

• in 1st gear is 20 km h–1
• in 5th gear is 120 km h–1

Given that the fastest speed of the bike 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.

(4)

(Total for question = 7 marks)

I am Sorry !!!!!

Q3.

A car has seven gears.
The fastest speed of the car

• in 1st gear is 30 km h–1
• in 7th 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 4th gear.

(4)

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

(3)

(Total for question = 7 marks)

Q4.

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

• in 1st gear is 25 km h–1
• in 6th gear is 140 km h–1

Given that the fastest speed of the motorcycle 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.

(4)

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

(4)

(Total for question = 8 marks)

Q5.

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

• in 1st gear is 40 km h–1
• in 8th gear is 200 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 5th gear.

(3)

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

(3)

(Total for question = 6 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)

I am Sorry !!!!!

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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