



**Unit 11 : Card Game**

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11.1 Three rectangular cards are numbered 1, 3 and 5



Sanjay picks one of these cards at random.

Find the probability that the number on the card he picks is . . .

- (a) 5
- (b) an even number.

11.2 Three circular cards are numbered 2, 3 and 4



Sharda randomly picks one of these circular cards. Find the probability that the number on the card which she takes out is an even number.

- 11.3 Amrita has all six cards. She picks one rectangular card and one circular card. She adds together the numbers on the two cards to find the total for these two cards. Complete the table to show all possible totals. Three totals have been done for you.

		Number on rectangular card		
		1	3	5
Number on circular card	2	3		
	3			8
	4	5		
	5			

- 11.4 Find out the probability that the sum of the numbers on the cards that Amrita picks up is 8

## Unit 12 : Tracking the Journey

The 'odometer' of a car tells you how far the car has travelled in its entire life. The 'trip odometer' can be reset any time if you wish to find out the length of a trip.



Last year, the Mehta family travelled for a vacation to Shimla in their brand-new car. After a while, Mr. Mehta noted that the main odometer of their car read 490 km and the trip odometer was showing 22.

When the Mehta family reached the destination, Mr Mehta asked his daughter Ishita, " The main odometer is showing precisely two times the trip odometer. How much have we travelled today?"

Ishita made the following observation table to analyse the progress of the journey-

Distance travelled (km)	Odometer	Trip Odometer	Difference between Odometer and Trip Odometer
...	490	22	468
1	$490+1 = 491$	$22+1 = 23$	468
2	$490+2 = \dots$	$22+2 = \dots$	468
3	$490+ \dots = 493$	$22+ \dots = 25$	.....
4	$490+ \dots = \dots$	$22+ \dots = \dots$	.....
.			
.			
x	$490+x$	-	468

**12.1** Can you help Ishita to find out how much distance did the Mehta family travel from home to reach the hill station?

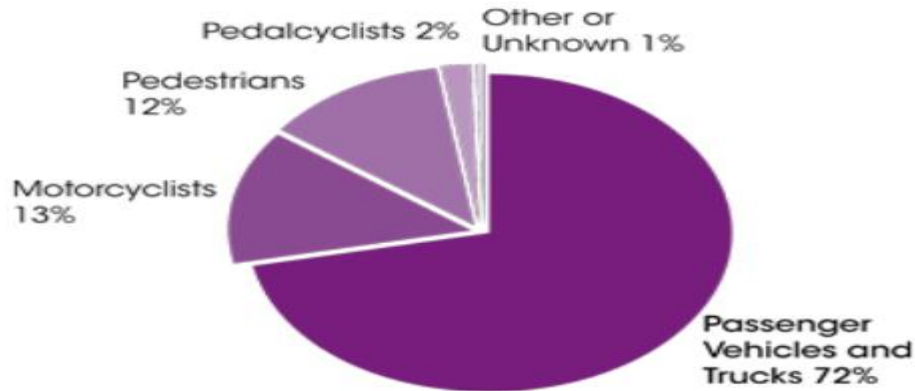
**Read the following for questions 3 to 5:**

### **Global Road Safety**

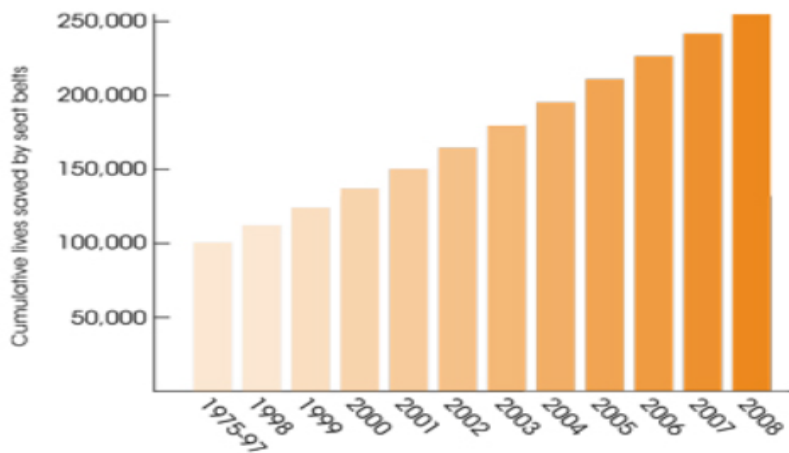
Driving without a rear-view mirror is not only “irresponsible” but also “dangerous” since it blocks a significant viewing arc of the driver, causing collisions with faster moving vehicles coming from the rear, said the senior officer.

“There is also very little compliance with the provisions for use of rear seat belts in cars. This is reflective of poor awareness among motorists about this crucial safety measure to prevent loss of life in case of a serious accident. There are already provisions under the Motor Vehicles Act, 1988, and Central Motor Vehicles Rules, 1989, for these issues.”

## Most People Killed in Crashes are Drivers or Passengers<sup>1</sup>



## Seat Belts Have Saved an Estimated 255,000 Lives Since 1975<sup>5</sup>



Based on the article answer the following questions:

Q3. Why should we wear seatbelts – use one of Newton's Laws in your answer?

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Q4. Why is it advised to use seat belts while driving a car?

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**Q5. Which of the following is a measure of inertia?**

- (a) Velocity of an object**
- (b) Mass of an object**
- (c) Volume of an object**
- (d) All of the above**

**Read the following for questions 6 to 7:**

A farmer was working with dairy cattle at an agricultural experiment station. The population of flies in the barn where the cattle lived was so large that the animals' health was affected. So the farmer sprayed the barn and the cattle with a solution of insecticide A. The insecticide killed nearly all the flies. Sometime later, however, the number of flies was again large. The farmer again sprayed the insecticide. The result was similar to that of the first spraying. Most, but not all of the flies were killed. Again, within a short time the population of flies increased, and they were again sprayed with the insecticide. This sequence of events was repeated five times: then it became apparent that insecticide A was becoming less and less effective in killing the flies. The farmer noted that one large batch of the insecticide solution had been made and used in all the sprayings. Therefore, he suggested the possibility that the insecticide solution decomposed with age.

Answer the following:

Q6. The farmer's suggestion is that the insecticide decomposed with age. Briefly explain how this suggestion could be tested?

Q7. The farmer's suggestion is that the insecticide decomposed with age. Give two alternative explanations as to why "insecticide A was becoming less and less effective..."

प्रश्न 8: प्रत्येक जवाब का अंतिम शब्द "त्र" है। निम्न मंजूषा से सही उत्तर चुनकर लिखें।

वाक्यांश	शब्द
पंचगव्य में से एक	
महाभारत युद्ध की जगह	
गणित के नियम	
नाटक के कलाकार	
नक्शा	
तारे ग्रह	
लक्ष्मण का दूसरा नाम	
उटपटांग	
सौभाग्य के लिए पहने जाने वाली माला	
छल-कपट	

मंजूषा:

गौ मूत्र	पात्र	चरित्र	मानचित्र	मंगलसूत्र	सूत्र	नक्षत्र
सौमित्र	शस्त्र	षड्यंत्र	कुरुक्षेत्र	विचित्र	पौत्र	सूत्र