# The_Great_Quiz_Book

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# Chapter 1

# Math Problems

## 1.1 Velocity

### 1.1.1 NY and LA Train

A train leaves New York at 8:00 AM traveling west at 60 mph. Another train leaves Los Angeles at 6:00 AM traveling east at 70 mph on the same track. If the distance between New York and Los Angeles is 2,800 miles, at what time will the two trains meet?[1]

### 1.1.2 Divisible by 11 and difference

Let us call all numbers divisible by 11 'Beautiful Numbers'. What is the difference between the largest and smallest five-digit 'Beautiful Number'? [2]

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[1] The two trains will meet at 4:28 AM the next day.

Distance $= 2800 - 70 \times 2 hours = 2660$ miles. $Time = \frac{2600}{60+70}$.

Alternate method: If they meet after **t** hours, $x = 60t$ and $2800 - x = 70(t + 2)$. Solve for t.

[2] Largest: 99990, Smallest: 11110, Difference: 88880 \end{center}

# Chapter 2

# Statistics

## 2.1 Basic Questions

### 2.1.1 Average with origin, scale changed

The average of 10 numbers is 49. If each of the numbers is divided by 7 and the quotient is then added by 5, what is the changed average number?[1]

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[1] $\frac{49}{7} + 5 = 12$

# Chapter 3

# Puzzles

## 3.1 Logic

A shepherd has to cross a river with a sheep, a wolf and a cabbage. Only two can go on the boat, for example, the shepherd and the sheep. How can they cross the river without the wolf eating the sheep and or the sheep eating the cabbage? [1]

## 3.2 Lock Puzzles

### 3.2.1 Lock Puzzle 01

There is a combination lock lock with three digits.[2] The clues are the following:

| Digits | No. of Correct Digits | Position |
|--------|-----------------------|----------|
| 964 | 2 | Wrong |
| 286 | 1 | Wrong |
| 147 | 1 | Wrong |

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[1] In the following order –

   i. Bring sheep
  ii. Bring back nothing
 iii. Bring wolf
 iv. Bring back sheep
  v. Bring cabbage
 vi. Bring back nothing
vii. Bring wolf

[2] 679

(a) 523 are removed by clue no. 5

(b) 1 is removed by clue 3 & 4 (can't be in right and wrong position simultaneously)

(c) 8 is removed by clue 2 & 4 (can't be in right and wrong position simultaneously)

(d) 6 is correct digit by clue 2 (since 2 & are wrong)

(e) Position of 6 is 1st (by clue 1 & 2, both wrong position)

(f) 9 is the 3rd digit in solution by clue 4 (since 1 & 8 are incorrect)

(g) 4 is removed by clue 1 (since two correct digits are 9 & 6)

(h) The 2nd digit in solution is 7 (by clue 3 and since no other digit exists)

| Digits | No. of Correct Digits | Position |
| --- | --- | --- |
| 189 | 1 | Correct |
| 523 | 0 | NA |