Numerical Ability Questions

Latest Numerical Ability MCQ Objective Questions

Question 1:

View this Question Online >

The total population in a city is 40,000. The various sections of them are indicated below in the circle diagram:
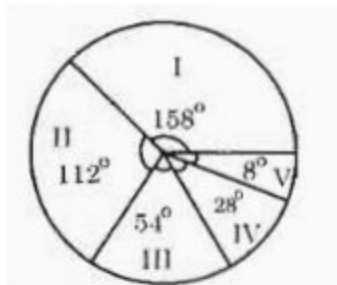
I - Employed in public sector

II - Employed in private sector

III - Employed in corporate sector

IV - Self employed

V - Unemployed.

The number of persons employed in corporate sector is -

1. 3,000

2. 6,000

3. 8,000

4. 9,000

4. 9,000

Answer (Detailed Solution Below)

Option 2 : 6,000

Numerical Ability Question 1 Detailed Solution

Calculation:

Total population of the city = 40,000

The number of persons employed (in degree) is

158° + 112° + 54° + 28° + 8° = 360°

Therefore,

360° = 40000

1° = 40000 / 360°

Then 54° = $\frac{40000}{360°}$ × 54°

∴ **The correct answer is 6000.**

Question 2:

The following graph shows the distribution of population in a city based on age group. Which age group has seen a continuous decrease in population over the 2 years?
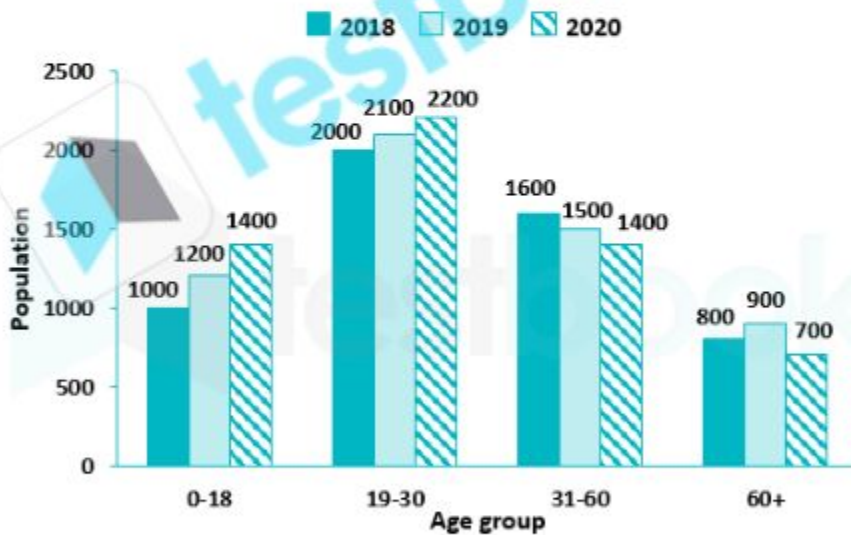
1. 0 - 18

2. 19 - 30

3. 31 - 60

4. 60+

Answer (Detailed Solution Below)

Option 3 : 31 - 60

Numerical Ability Question 2 Detailed Solution

Calculation:

In the given graph, age group(31-60) has seen a continuous decrease in population over the 2 years.

Correct Answer: 3) 31-60

Question 3:

In a city, each person has at least one hair on his/her head. At least two persons in this city are guaranteed to have exactly the same number of hair on their heads if the population of the city

1. is greater than the maximum possible number of hair on the head.

2. is less than the maximum possible number of hair on the head.

3. has at least one pair of identical twins.

4. is genetically homogeneous.

Answer (Detailed Solution Below)

Option 1 : is greater than the maximum possible number of hair on the head.

Numerical Ability Question 3 Detailed Solution

Concept -

The Pigeonhole Principle states that if you want to distribute n items into m containers and n > m, then at least one container must contain more than one item.

Explanation -

In the context of the number of hairs on people's heads in a city, each person corresponds to a

"pigeon," and the number of hairs on their heads corresponds to a "pigeonhole."

If the population of the city (n) is greater than the maximum possible number of hairs on the head (m), then, by the Pigeonhole Principle, at least two persons are guaranteed to have exactly the same number of hairs on their heads.

So, **the correct answer is: is greater than the maximum possible number of hair on the head.**

Question 4:

View this Question Online >

Balls are being rolled out with equal initial speeds along a frictionless, undulating (wave-like) track in quick succession. There is denser clustering of balls around point B than around point A. Which of the following statements is true?

1. Point A is higher than B

2. Point B is higher than A

3. Points A and B are at the same heights.

4. Balls reached point A first and then point B

Answer (Detailed Solution Below)

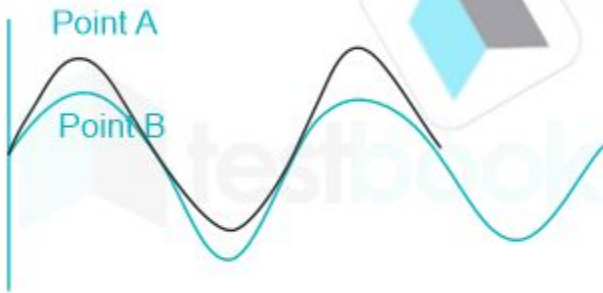Option 1 : Point A is higher than B

Numerical Ability Question 4 Detailed Solution

The answer is **Point A is higher than B**

Explanation:-

When the balls were released with equal initial speeds along a frictionless, undulating track, they gained more potential energy when they ascended a height. At point A, which is higher than point B, the balls have to overcome a higher potential energy gain.

This could cause the balls to cluster around the peak before descending, which could explain the denser clustering at point A than at point B. After reaching point A and descending, the balls gain kinetic energy and speed up, becoming more dispersed around point B.

Point A

Point B

So this would lead to a denser clustering of balls around point A than around point B, indicating that **point A is higher than point B.**

Question 5:

A traveller to the town reaches a crossroad. Upon asking residents A, B and C for directions to a certain destination, he gets the following responses

A: turn left

B: do not turn left

C: go straight

If only one among A, B and C is truthful, the traveller

1. should go left

2. should go straight

3. should go right

4. will not be able to decide between going left or right

Numerical Ability Question 5 Detailed Solution

The answer is

Explanation:-

The condition tha**t only one person is telling the truth:**

If A was telling the truth (suggesting to turn left) then B, who says do not turn left, would be lying. But this would imply that C, who suggests to go straight (not left), is also telling the truth. This **conflicts with our condition that only one person is telling the truth.**

Similarly, if B was telling the truth (suggesting not to turn left), then C, who suggests going straight (which also implies not turning left), would also be telling the truth. Again, this scenario conflicts with our condition.

Now, if C were telling the truth (suggesting to go straight), this would mean neither turning left nor right. However, this wouldn't make A (who says turn left) or B (who says do not turn left, implying to turn right) a sole truth-teller.

Given these possibilities, **the instructions from A, B, and C are in contradiction,** and there is no single direction corroborated by exactly one of the residents as required by the condition given in the question.

So the correct answer is the traveler will not be able to decide between going left or right.

Top Numerical Ability MCQ Objective Questions

Question 6

A batsman makes a score of 97 runs in 15th inning and thus increases his average by 5. Find his average after 15th inning.

1. 15

2. 82

3. 27

4. 92

Answer (Detailed Solution Below)

Option 3 : 27

Numerical Ability Question 6 Detailed Solution

Given:

The batsman scores 97 runs in the 15th inning.

This increases his average by 5 runs.

Formula used:

Average = Total runs / Number of innings

Solution:

Let x be the batsman's average after 14 innings.

We know that the total runs scored by the batsman in 14 innings is 14x.

According to the question:

14x + 97 = 15(x + 5)

14x + 97 = 15x + 75

x = 22

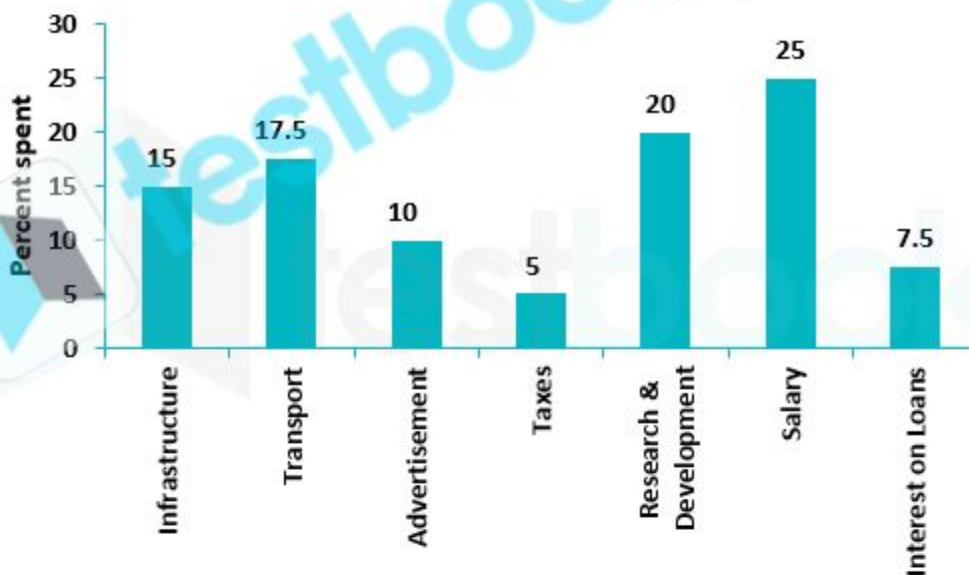Average after 15th innings = x + 22 = 5 + 22 = 27

∴ **Option 3 is the correct answer.**

Question 7

Direction: Study the given graph and answer the question that follows.

Percentage distribution of total expenditure of a company Under various heads during a year

The expenditure on Interest on Loans is by what percentage more than the expenditure on Taxes ?

1. 30%

2. 50%

3. 40%

4. 25%

Answer (Detailed Solution Below)

Option 2 : 50%

Numerical Ability Question 7 Detailed Solution

Given:

Percentage of Taxes = 5

Percentage of Interest on Loans = 7.5

Calculation:

Difference between the expense of Interest on Loans and Taxes = 7.5 - 5

⇒ 2.5

∴ **The required percentage = 2.5/5 × 100**

⇒ **50%**

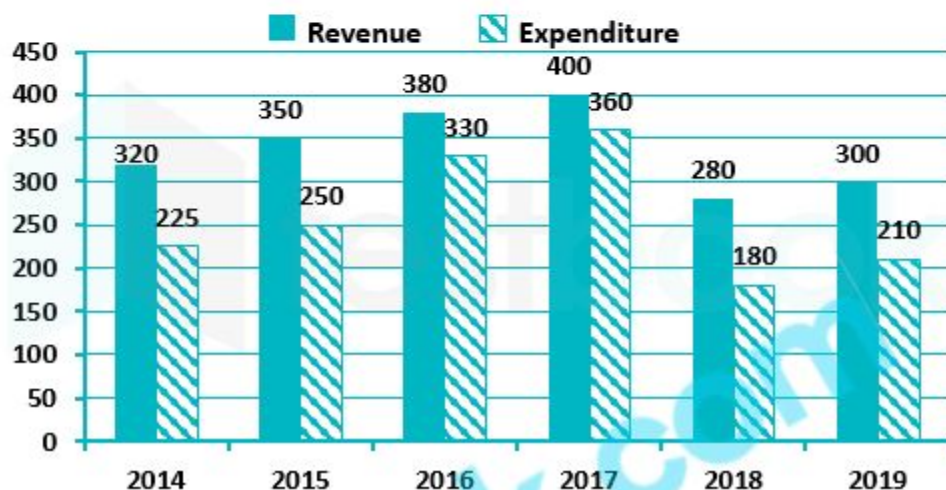**Question 8**

Study the given graph and answer the question that follows.

Revenue and Expenditure of company XYZ (in Rs. crores) during 2014 to 2019

	Revenue	Expenditure
2014	320	225
2015	350	250
2016	380	330
2017	400	360
2018	280	180
2019	300	210

In which year was the percentage increase in the revenue as compared to that in its preceding year below 6%?

1. 2019

2. 2016

3. 2015

4. 2017

Answer (Detailed Solution Below)

Option 4 : 2017

Numerical Ability Question 8 Detailed Solution

Formula used:

Percentage Increase = $\left[\dfrac{Final\ Value - Initial\ Value}{Initial\ Value}\right] \times 100$

Calculation:

Increase percent in 2015 = (350 - 320)/ 320 × 100 = 30/320 × 100 = 9.37%
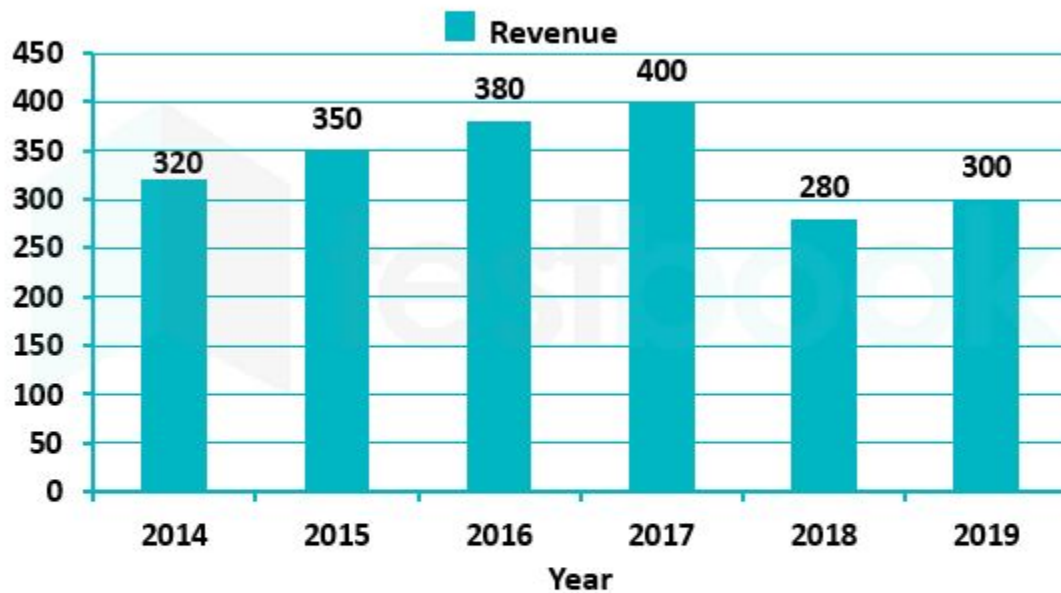
Increase percent in 2016 = (380 - 350)/ 350 × 100 = 30/350 × 100 = 8.57%

Increase percent in 2017 = (400 - 380)/ 380 × 100 = 20/380 × 100 = **5.26%**

Decrease percent in 2018 = (400 - 280)/ 400 × 100 = 120/400 × 100 = 30**%**

Increase percent in 2019 = (300 - 280)/ 280 × 100 = 20/280 × 100 = 7.14%

Revenue and Expenditure of company XYZ (in Rs. crores) during 2014 to 2019

Revenue

Year	Revenue
2014	320
2015	350
2016	380
2017	400
2018	280
2019	300

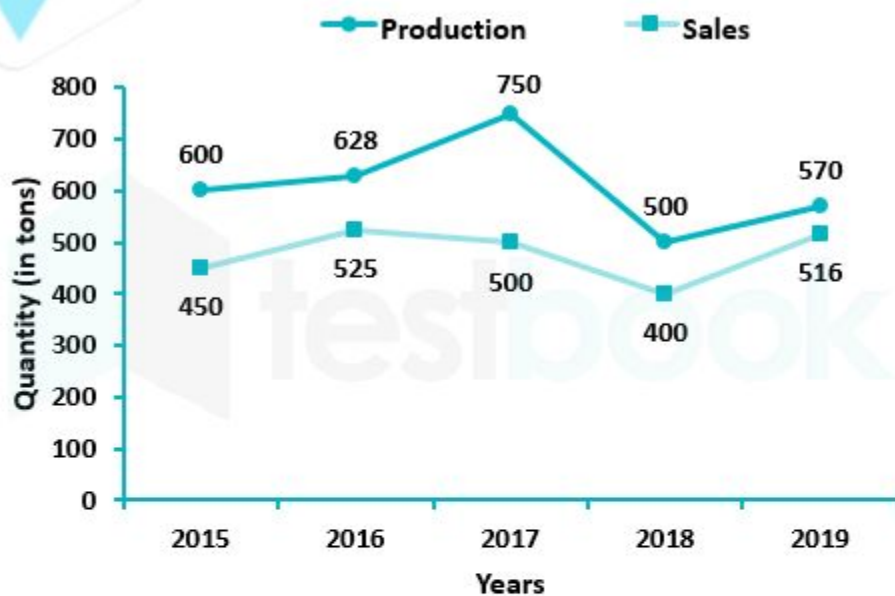∴ In 2017 the percentage increase in the revenue as compared to its preceding year is below 6%.

Question 9

The line graph shows the production (in tonnes) and the sales (in tonnes) of a company.

What percentage (approximately) of the total production of the company is the total sales of the company in all the years together? (correct to 2 decimal places)

1. 75

2. 72.55

3. 68.12

4. 78.44

Answer (Detailed Solution Below)

Option 4 : 78.44

Numerical Ability Question 9 Detailed Solution

Calculation:

Total production = (600 + 628 + 750 + 500 + 570) tones = 3048 tons

Total sales = (450 + 525 + 500 + 400 + 516) tons = 2391 tons
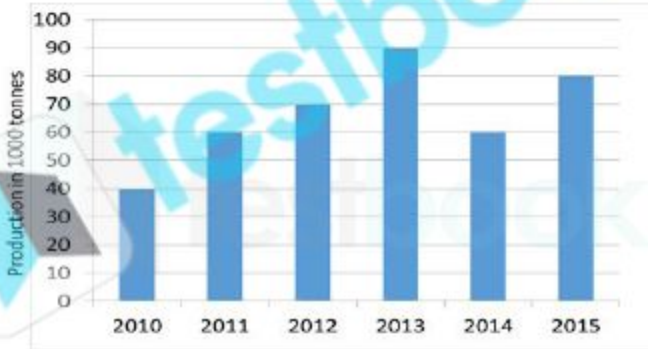
∴ **Percentage of the total sales = 2391/3048 × 100**

⇒ **78.44%**

Question 10

Study the given bar chart and answer the question that follows.

The bar chart shows the production of medicines by a company (in 1000 tonnes) over six years 2010 to 2015.

If in each of the following years, the percentage increase in production as compared to the previous year is taken, then the ratio for increase production of the year 2011 to increase production of year 2015 is:

1. 2 : 1

2. 1 : 2

3. 2 : 3

4. 3 : 2

Answer (Detailed Solution Below)

Option 4 : 3 : 2

Numerical Ability Question 10 Detailed Solution

Formula used:

Percentage Increase = (Production of current year - Production of previous year)/ Production of Previous year × 100

Calculation:

Percentage increase in the production of medicines of the year 2011 = (60 - 40)/40 × 100 = 20/40 × 100 = 50%

Percentage increase in the production of medicines of the year 2015 = (80 - 60)/60 × 100 = 20/60 × 100 = 100/3%

∴ **The required ratio = 50% : 100/3%**

⇒ **1 : 2/3**

⇒ **3 : 2**

Question 11

A bus travels from station P to station Q at a speed of 70 km/h, and from station Q to station P at a speed of 90 km/h. What is the average speed of the bus during the entire journey?

1. 75.78 km/h

2. 78.75 km/h

3. 80.25 km/h

4. 82.35 km/h

Answer (Detailed Solution Below)

Option 2 : 78.75 km/h

Numerical Ability Question 11 Detailed Solution

Given:

Speed from station P to station Q: 70 km/h

Speed from station Q to station P: 90 km/h

Formula:

Average speed = 2xy/x + y

Solution:

Average speed = (2 × 70 × 90)/70 + 90 = 78.94 km/h

Therefore, the average speed of the bus during the entire journey is 78.94 km/h

Question 12

A and B are two typists. One afternoon, they were each given 80 pages for typing. They divided the work equally, but B finished 40 minutes before A, who took 4 hours for the same. The next afternoon, they were again given 121 pages to type. However, this time they decided to divide the work such that they finished typing simultaneously. How many pages did A have to type?

1. 50 pages

2. 77 pages

3. 60 pages

4. 55 pages

Option 4 : 55 pages

Numerical Ability Question 12 Detailed Solution

Given data:

A's time for 80 pages: 4 hours

B's time for 80 pages: 3 hours 20 minutes

Concept: Work and time ratio.

Calculation:

The ratio of work rates of A and B = B's time/A's time = 4/3.333 = 1.2

Ratio of pages = 1.2 : 1 = 6 : 5

A's share of 121 pages = 5/11 × 121 = 55 pages

Hence, A had to type 55 pages.

Study the histogram that shows the marks obtained by students in an examination and answer the question that follows.
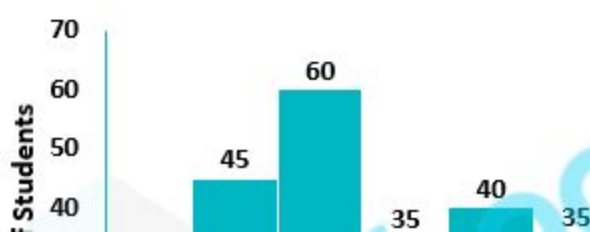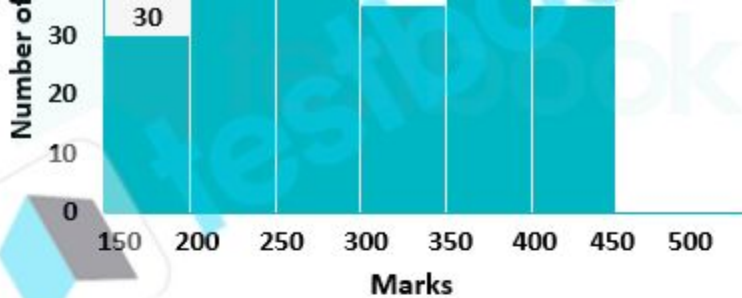
By what percentage is the number of students who obtained marks between 200 and 300 more than the number of students who obtained 350 or more marks?

1. 55%

2. 25%

3. 30%

4. 40%

Answer (Detailed Solution Below)

Option 4 : 40%

Numerical Ability Question 13 Detailed Solution

Given:

No of the students who obtained marks between 200 and 300

⇒ 45 + 60 = 105

No of students who obtained marks between 350 or more marks

⇒ 40 + 35 = 75

Calculation:

⇒ The required percent = (105 - 75)/75 × 100

⇒ 30/75 × 100

⇒ 40%

∴ **The answer is 40%.**

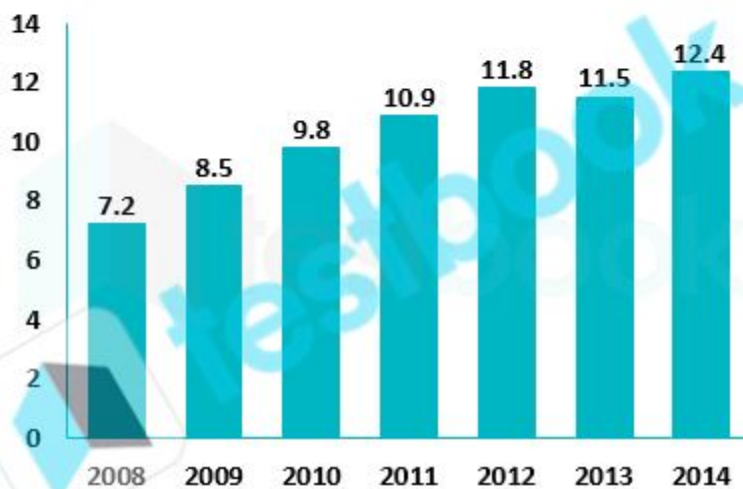## Question 14

Study the following bar graph and answer the question that follows.

Export of Diamond (in Rs. crore)

In how many years was the export more than the average for the given period?

1. 3

2. 5

3. 6

4. 4

Answer (Detailed Solution Below)

Option 4 : 4

Numerical Ability Question 14 Detailed Solution

Calculation:

Average Export diamonds for 7 years = Total export / Total no of years

$\Rightarrow (7.2 + 8.5 + 9.8 + 10.9 + 11.8 + 11.5 + 12.4)/7 = 72.1/7$

$\Rightarrow 10.3$ crores

In the given 4 years, the export is more than the average export:

$\Rightarrow 2011 = 10.9$ crores

$\Rightarrow 2012 = 11.8$ crores

$\Rightarrow 2013 = 11.5$ crores

$\Rightarrow 2014 = 12.4$ crores

∴ **The no of years where export is more than the average export is 4.**

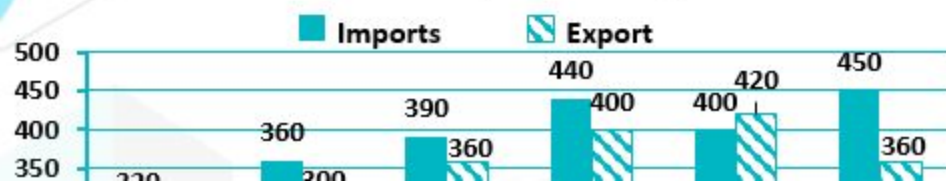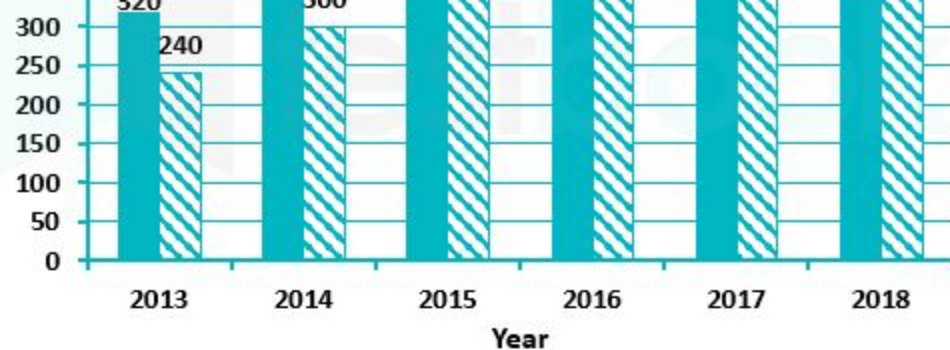**Question 15**

Study the given graph and answer the question that follows.

Imports and Exports of country XYZ during 2013 to 2018 (in Rs. crore)

■ Imports ▧ Export

500
450
400
350

360   390   440   400   420   450
360   360   400   360

What is the ratio of the total exports in 2014 and 2017 to the total imports in 2015 and 2018?

1. 6 : 7

2. 3 : 2

3. 5 : 6

4. 14 : 15

Answer (Detailed Solution Below)

Option 1 : 6 : 7

Numerical Ability Question 15 Detailed Solution

Calculation:

Sum of the imports in 2015 & 2018 = 390 + 450 = 840 crore

Sum of the exports in 2014 & 2017 = 300 + 420 = 720 crore

∴ **The required ratio = 720 : 840**

⇒ **6 : 7**