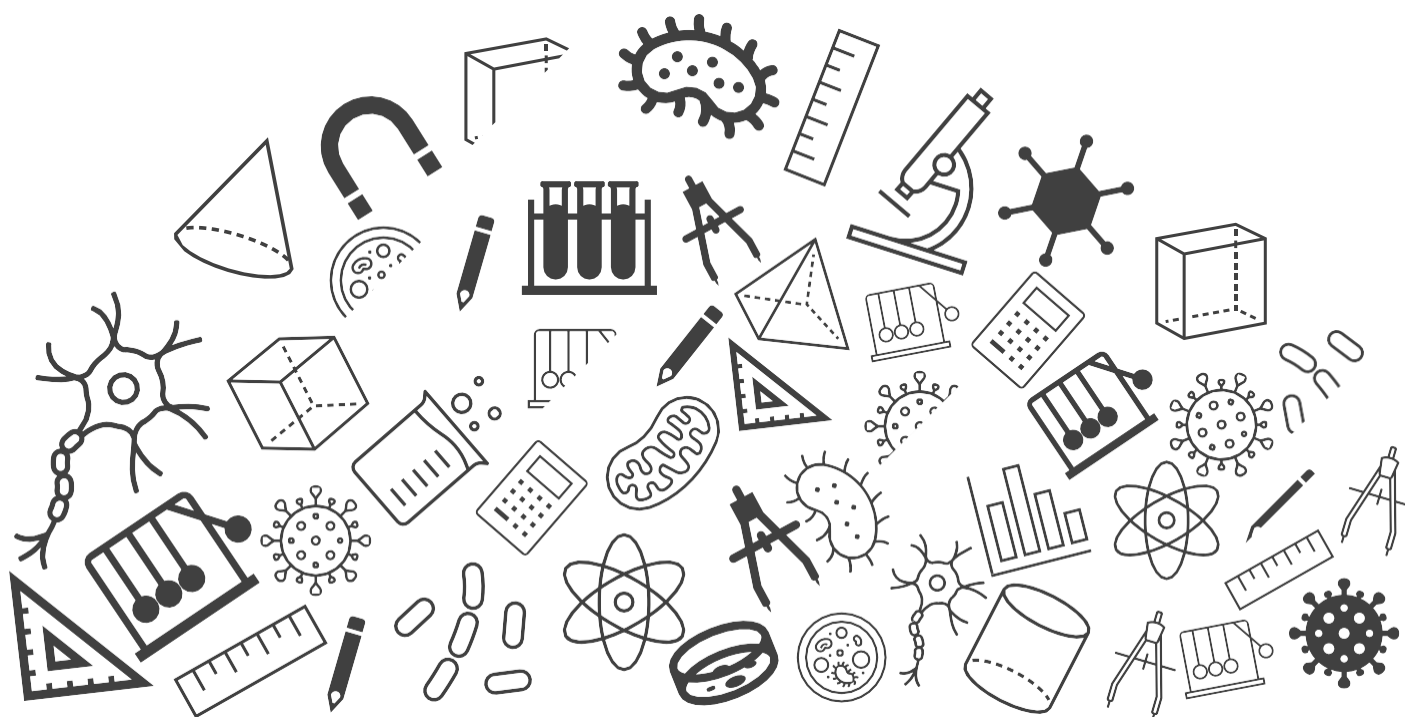




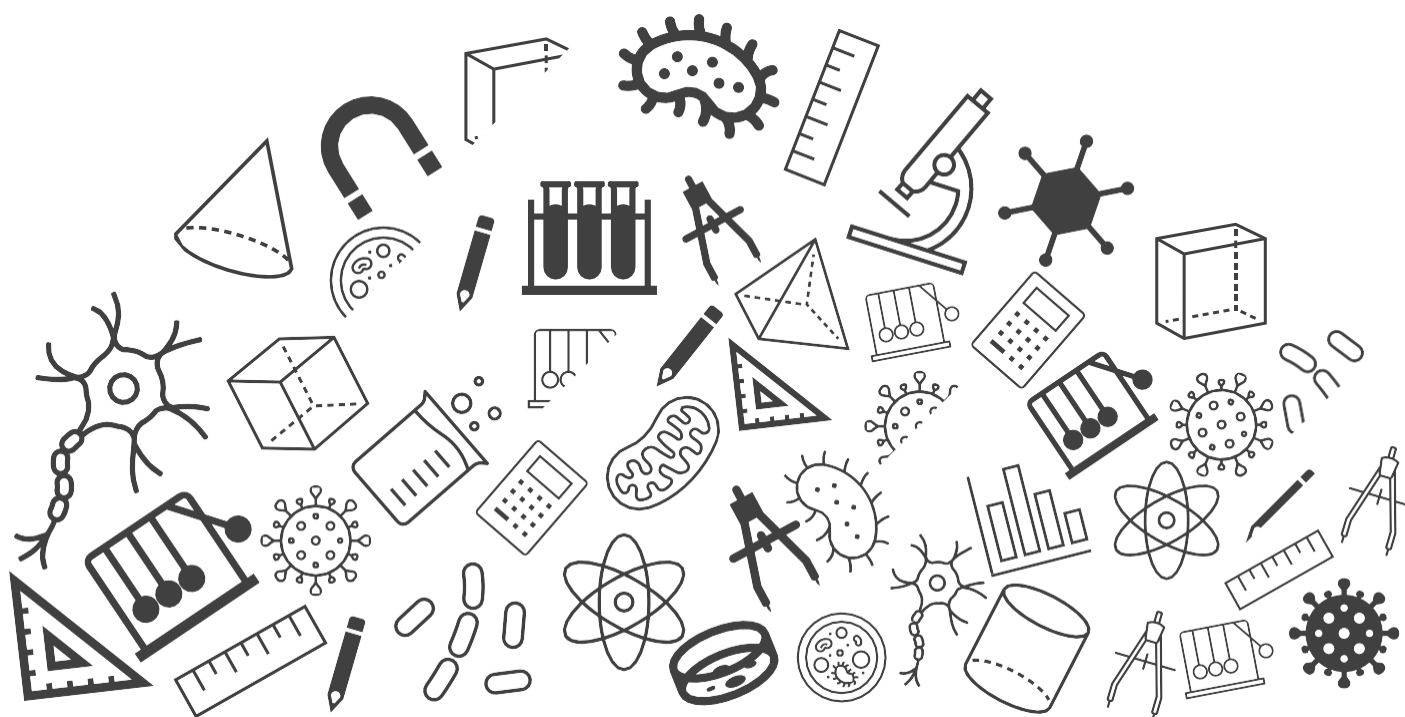
Grade 08: Maths

Exam Important Questions



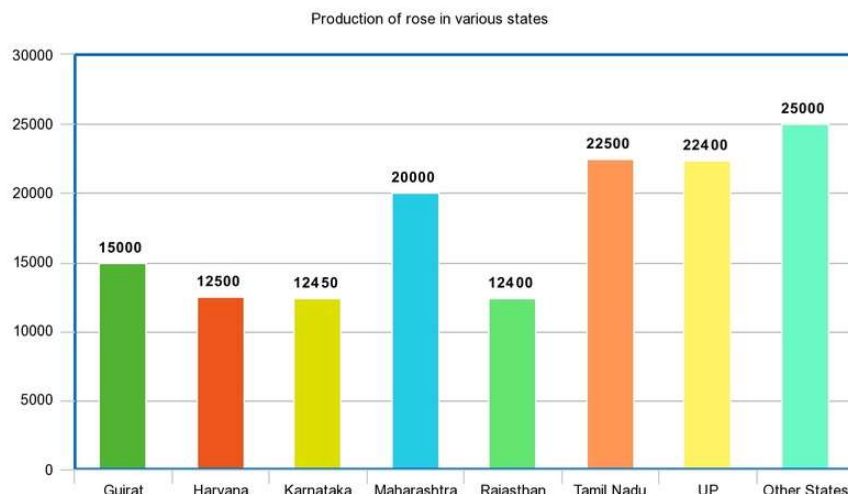


Data Handling



Data Handling

1. Study the following graph carefully and answer the questions based on it.



- (A) By what percentage production of rose in other states is more than that of the Maharashtra?
 (B) What is the approximate average production of roses (in thousands) across all the states?
 (C) Approximately what percentage of the total rose production is shared by the other states?

- ☒ A. (A) → 25%; (B) → 18; (C) → 18%
☐ B. (A) → 30%; (B) → 21; (C) → 10%
☐ C. (A) → 20%; (B) → 19; (C) → 30%
☐ D. (A) → 5%; (B) → 8; (C) → 27%

(A) Rose production in other states is given by the last bar = 25,000
 Rose production by Maharashtra = 20,000

$$\begin{aligned}\text{Required percentage} &= \frac{25000 - 20000}{20000} \times 100 \\ &= \frac{5000}{20000} \times 100 = 25\% \text{ (more)}\end{aligned}$$

(B) Total production of rose by all the states
 = 15000 + 12500 + 12450 + 20000 + 12400 + 22500 + 22400 + 25000
 = 142250

$$\begin{aligned}\therefore \text{Average} &= \frac{\text{Total production}}{\text{Number of states}} \\ &= \frac{142250}{8} \\ &= 17781 \approx 18000\end{aligned}$$

(C) Percentage of total rose production shared by the other states is:
 = $\frac{\text{Rose production in other states}}{\text{Total Production}} \times 100$

$$\begin{aligned}&= \frac{25000}{142250} \times 100 \\ &= 17.6\% \approx 18\%\end{aligned}$$

Data Handling

2. What is the probability of getting a sum of 9, when 2 dice are rolled together?

[2 marks]

Favourable outcomes: (3,6), (4,5), (5,4), (6,3)

Number of favourable outcomes = 4

Total number of outcomes = 36

[0.5 mark]

Probability of getting a sum of 9

$$= \frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$$

$$= \frac{4}{36}$$

$$= \frac{1}{9}$$

[1.5 marks]

3. A coin is tossed 200 times and head appeared 120 times. What is the probability of getting a head in this experiment?

[2 marks]

Total number of times the coin is tossed = 200

Total number of times head appear = 120

Probability of getting a head

$$= \frac{\text{Total number of times head appear}}{\text{Total number of times the coin is tossed}}$$

[1 mark]

$$= \frac{120}{200}$$

$$= \frac{3}{5}$$

$$\therefore \text{Probability of getting a head} = \frac{3}{5}$$

[1 mark]

Data Handling

4. Sonia picks up a card from the given cards. Calculate the probability of getting:

R 1	Y 2	Y 3	R 4	B 5
B 6	G 7	Y 8	R 9	G 10

- (i) an odd number
(ii) a Y card
(iii) B card bearing number > 7

[3 marks]

- (i) The probability of getting an odd number

$$= \frac{\text{Number of cards with an odd number}}{\text{Total number of cards}}$$

$$= \frac{5}{10}$$

$$= \frac{1}{2}$$

[1 mark]

- (ii) The probability of getting a Y card

$$= \frac{\text{Number of Y cards}}{\text{Total number of cards}}$$

$$= \frac{3}{10}$$

[1 mark]

- (iii) The probability of getting a B card bearing number greater than 7

$$= \frac{\text{Number of B cards bearing number greater than 7}}{\text{Total number of cards}}$$

$$= \frac{0}{10}$$

$$= 0$$

[1 mark]

Data Handling

5. In a deck of 52 cards, there are 4 kings, 4 queens, and 4 jacks, which are known as the face cards. If a card is drawn from the deck, what is the probability of it being a face card?

- ☐ A. $\frac{3}{10}$
☐ B. $\frac{1}{13}$
☒ C. $\frac{3}{13}$
☐ D. $\frac{1}{12}$

Total number of cards in a deck = 52

If a card is drawn from the deck:

Number of outcomes = 52

Total number of face cards = 4 + 4 + 4 = 12

Number of favourable outcomes for being a face card = 12

Probability of an event = $\frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}}$

Hence, the probability of getting a face card = $\frac{12}{52} = \frac{3}{13}$

6. If you have a spinning wheel with 3 green sectors, 1 blue sector, and 1 red sector, what is the probability of getting a green sector? What is the probability of getting a non-blue sector?

[2 marks]

There are five sectors. Three sectors are green out of five sectors. Therefore, the probability of getting a green sector = $\frac{3}{5}$.

[1 mark]

There is only one blue sector out of five sectors.

So, non-blue sectors = 5 - 1 = 4 sectors.

[0.5 mark]

Therefore, the probability of getting a non-blue sector = $\frac{4}{5}$.

[0.5 mark]

Data Handling

7. If two dice are thrown at the same time, in how many cases will the sum of numbers on the faces of the two dice be 6?

- ☐ A. 6
- ☐ B. 3
- ☐ C. 4
- ☒ D. 5

The correct answer is **Option D**.

Let us make a table to show all the possible outcomes.

	1	2	3	4	5	6
1	1, 1	1, 2	1, 3	1, 4	1, 5	1, 6
2	2, 1	2, 2	2, 3	2, 4	2, 5	2, 6
3	3, 1	3, 2	3, 3	3, 4	3, 5	3, 6
4	4, 1	4, 2	4, 3	4, 4	4, 5	4, 6
5	5, 1	5, 2	5, 3	5, 4	5, 5	5, 6
6	6, 1	6, 2	6, 3	6, 4	6, 5	6, 6

A sum of 6 is obtained when 1 & 5, 2 & 4, 3 & 3, 4 & 2, and 5 & 1 are obtained. So, 6 is obtained in 5 possible ways.

Data Handling

8. In a district, the number of branches of different banks is given below :

Bank	State Bank of India	Bank of Baroda	Punjab National Bank	Canara Bank
Number of branches	30	17	15	10

Draw a pie chart for this data.

[4 marks]

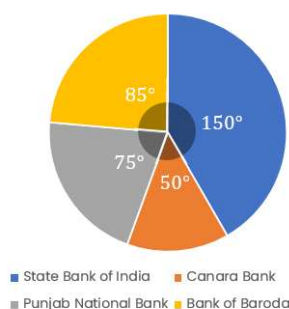
Total number of branches = $30 + 17 + 15 + 10 = 72$

[0.5 mark]

Bank	Number of branches	Central angle
State Bank of India	30	$\frac{30}{72} \times 360^\circ = 150^\circ$
Bank of Baroda	17	$\frac{17}{72} \times 360^\circ = 85^\circ$
Punjab National Bank	15	$\frac{15}{72} \times 360^\circ = 75^\circ$
Canara Bank	10	$\frac{10}{72} \times 360^\circ = 50^\circ$

[2 marks]

The pie chart is as following :



[1.5 marks]

Data Handling

9. A group of 360 people were asked to vote for their favorite season from the three seasons rainy, winter and summer. Find the central angle of each sector and draw a pie chart to show this information.

Season	Number of votes
Summer	90
Rainy	120
Winter	150

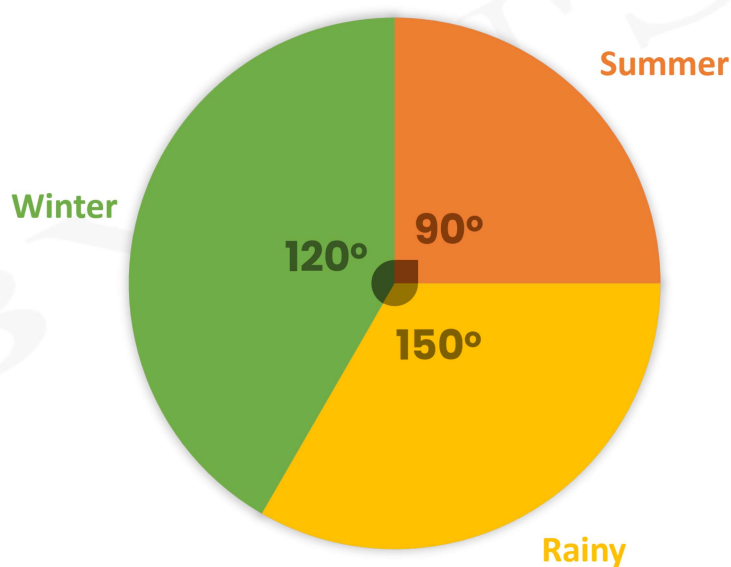
[3 marks]

Central angles for each sectors:

Season	Number of votes	Central angle
Summer	90	$\frac{90}{360} \times 360^\circ = 90^\circ$
Rainy	120	$\frac{120}{360} \times 360^\circ = 120^\circ$
Winter	150	$\frac{150}{360} \times 360^\circ = 150^\circ$

[1.5 marks]

Pie chart:



[1.5 marks]

Data Handling

10. Given below is the result of an annual examination of a class, showing the percentage of students in each category.

First division	Second division	Third division	Failed
25%	45%	20%	10%

Represent the above data by a pie chart.

[5 marks]

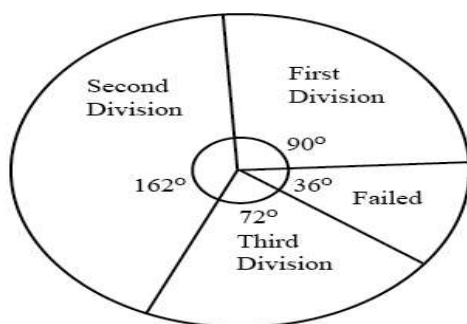
$$\begin{aligned}\text{Total percentage} &= 25 + 45 + 20 + 10 \\ &= 100\%\end{aligned}$$

[1 mark]

Division	Percentage	Central angle
First division	25%	$\frac{25}{100} \times 360^\circ = 90^\circ$
Second division	45%	$\frac{45}{100} \times 360^\circ = 162^\circ$
Third division	20%	$\frac{20}{100} \times 360^\circ = 72^\circ$
Failed	10%	$\frac{10}{100} \times 360^\circ = 36^\circ$
Total	100%	360°

[2 marks]

The pie chart for the given data is shown below:



[2 marks]