



THINK BIGGER

**QUANTATIVE
COGNIZANT - 2025
PART - 03**



MENSURATION



INNATE TALENT
TRANSFORMING FUTURE

GEOMETRY



In triangle ABC, AM is the angle bisector of angle BAC, where AM meets BC at point M. If $AB + AC = 7.2$ cm, $BM = 2.5$ cm and $MC = 2$ cm. What is the length of AB (in cm)?

- A. 2.2 cm
- B. 5 cm
- C. 3.2 cm
- D. 4 cm



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Points M(4, 1) and N(x, y) lie on the line $y = 3x - 11$. If the distance MN is 15 units, find the coordinates of point N(only positive coordinates).

- A. (8.74, 15.22)
- B. (9.26, 18.45)
- C. (0.74, 13.22)
- D. (9.56, 12.56)



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A regular hexagon is inscribed in a circle of radius 7 cm. What is the area of the hexagon?

- A. Cannot be Determined
- B. $147(\sqrt{3})/2$ cm square
- C. $294(\sqrt{3})$ cm square
- D. $147(\sqrt{3})$ cm square

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A solar-powered research drone is programmed to conduct a zigzag survey of a desert region. It travels west at 15 km/hr for 2 hours, then changes direction and travels northeast at 10 km/hr for 3 hours. If the drone's battery allows it to travel a total of 90 km before recharging, what is the maximum angular deviation of its path from the initial west direction?

- A. 22.5°
- B. 30°
- C. 45°
- D. 60°

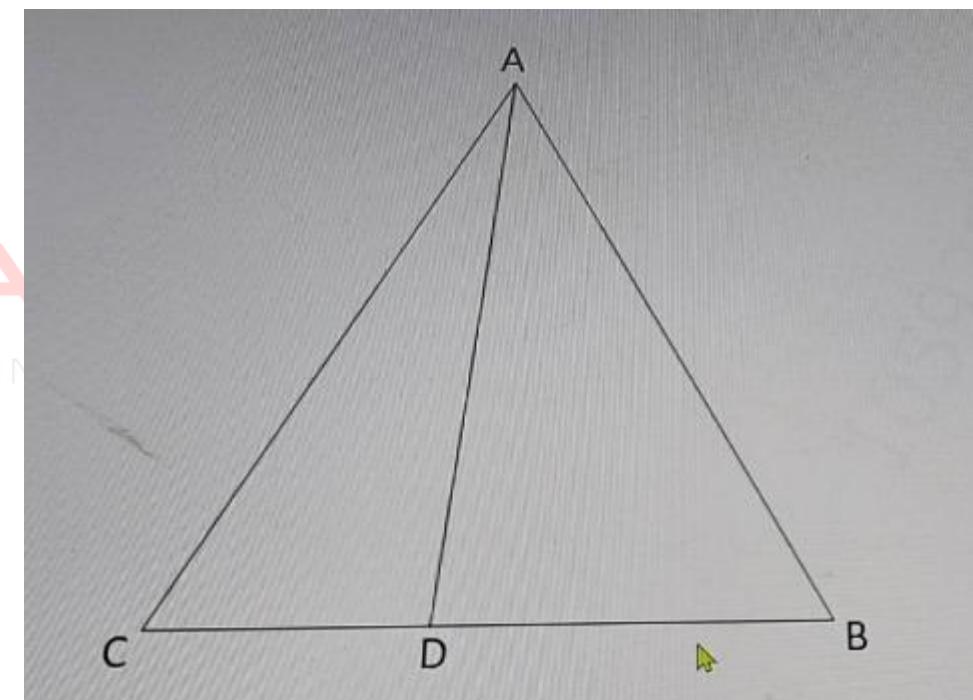
In triangle ABC, AD is the angle bisector of BAC, AE perpendicular CB. If $\angle B = 42^\circ$ and $\angle C = 58^\circ$ then, find $\angle DAE$.

- A. 16°
- B. 40°
- C. 20°
- D. 8°



In triangle ABC, AD intersect CB at point D. If $CD = 8 \text{ cm}$, $DB = 12 \text{ cm}$ and area of triangle ABC is 124 cm^2 then, find the area of triangle ACD.

- A. 49.6cm^2
- B. 50.4cm^2
- C. 62.6cm^2
- D. 74.4cm^2





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QUADRATIC EQUATION



If the roots of the quadratic equation $2x^2 - kx + 8 = 0$ have a ratio of 1:4, find the positive value of k.

- A. 6.
- B. 10
- C. 12
- D. 9



Find the difference of the roots of the equation $m^2 - 7m + 12 = 0$.

- A. 4
- B. 2
- C. 1
- D. -1



If α and β are roots of the quadratic equation $2x^2 + 17x + 15 = 0$, then find the value of $1/\alpha + \beta - 1/\beta$.

Given: $\alpha > \beta$

- A. 9.45
- B. +9.45
- C. 8.366
- D.-8.366



Find the value of k, if product of the roots of the equation $2m^2 - 11m + 4k = 0$ is 4?

- A. 2
- B. -1
- C. -2
- D. 1



Which of the following is the greatest prime factor of $(6^8 - 4)$?

- A. 325
- B. 650
- C. 1294
- D. 647



If $f(m) = km^2 - 4m + 3k$ is divisible by $m-3$, then find the value of k .

- A. 1
- B. -1
- C. 0
- D. -2



If $(-5+11)$ is one root of a quadratic equation with rational co-efficients, then find the other root of the equation.

- A. $(-5-11)$
- B. $(5-11)$
- C. $(-5+211)$
- D. $(5+11)$





Sum of the third and tenth terms of an arithmetic progression is 35. What is the sum of the first 12 terms of the arithmetic progression.

- A. 140
- B. 210
- C. 160
- D. 250



Suppose you have an arithmetic progression where the sum of the first 'n' terms is given by $S_n = 6n^2 - 8n$. What would the 12th term be?

- A. 138
- B. 140
- C. 130
- D. 142



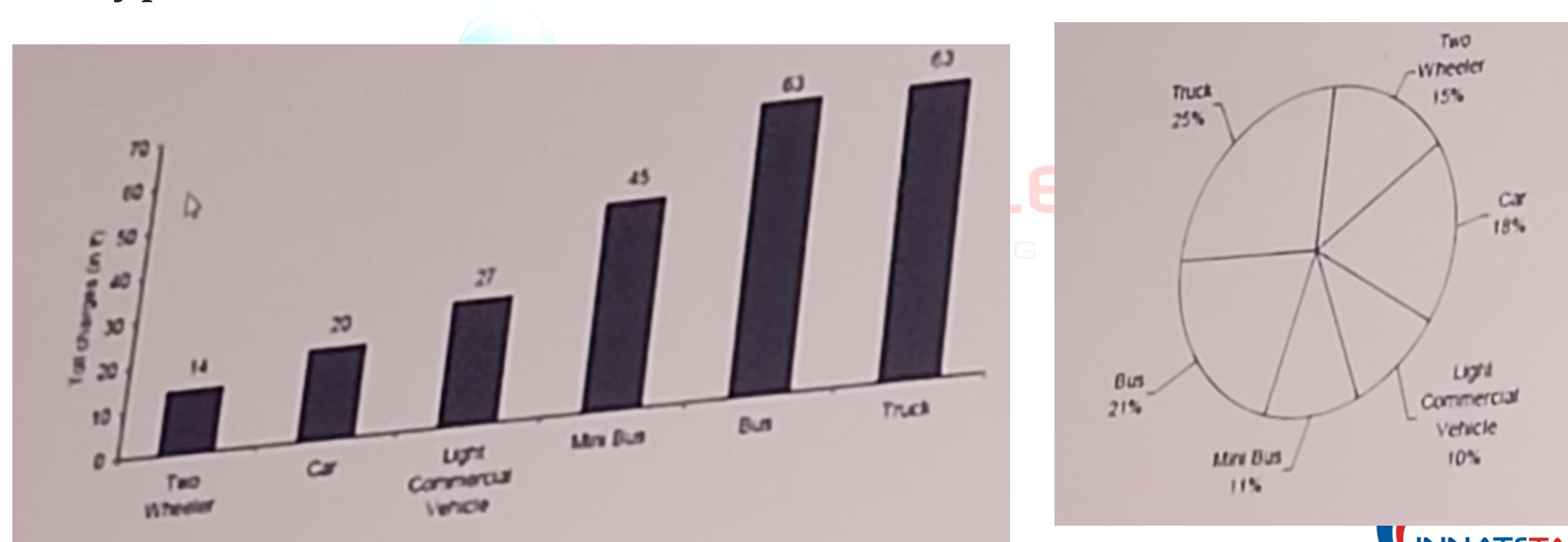
What is the sum of first 11 terms of an arithmetic progression if third term is -1 and the 8th term is 19

- A. 225
- B. 121
- C. 104
- D. 204





The bar graph shows the amount (in Rs) to be paid by different types of vehicles to cross toll plaza. The pie chart shows the breakup percentage of the types of vehicles that crossed the Toll Plaza on 5th November 2022.

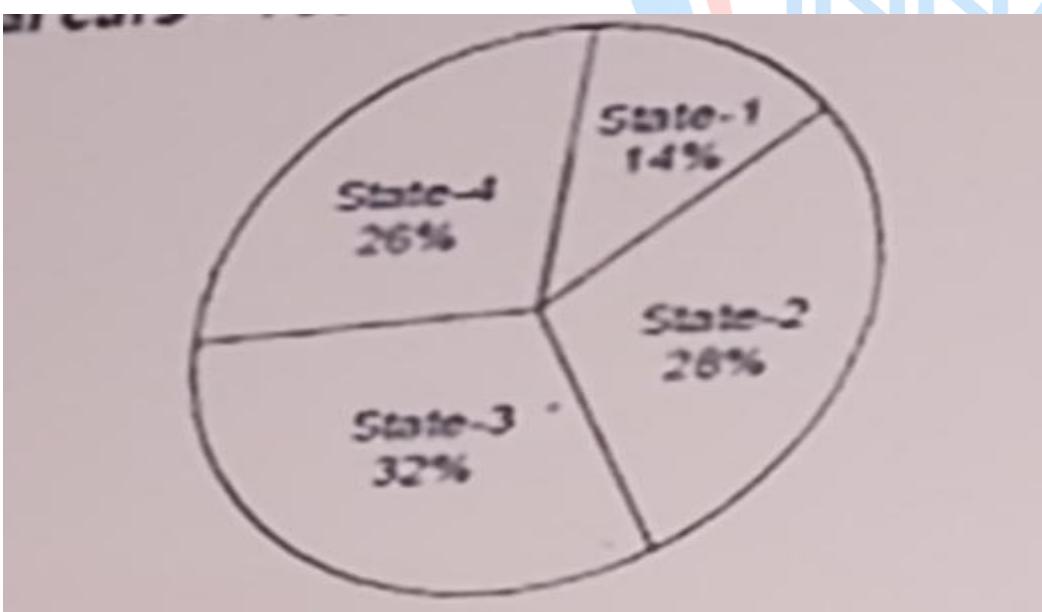


Which of the following is the correct order for the money collected through toll charges from the different types of vehicles on the mentioned date?

- A. Cars > Light Commercial Vehicles > Two Wheelers
- B. Two Wheelers > > Cars > Light Commercial Vehicles
- C. Light Commercial Vehicles > Cars > Two Wheelers
- D. Cars > Two Wheelers > Light Commercial Vehicles

The following pie chart shows the percentage wise distribution of cars in four different states. The table showing ratio between diesel and petrol engine cars which are distributed among the four different states.

If 25% of the diesel engine cars in state 3 are AC and the remaining cars are non-AC, What is the number of diesel engines cars in State 3 which are non-AC? **Total cars = 700** A. 150 B. 71 C. 69 D. None of these



State	Diesel Engine Cars	Petrol Engine Cars
State-1	3	4
State-2	5	9
State-3	5	3
State-4	1	1

The table shows data related to students who have appeared in the board exam in 145 schools across 8 states of the country. Which of the given states has the highest number of average students per school?

- A. AP
- B. Punjab
- C. Gujarat
- D. UP



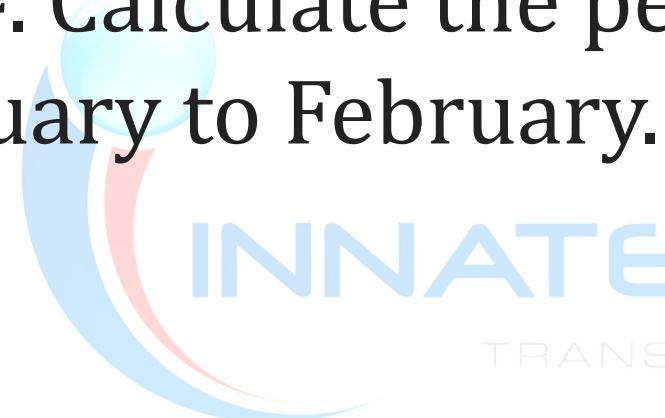
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State	Number of Schools	Total number of Students	Ratio of Boys to Girls	% of students with distinction
Bihar	16	2568	5 7	75
Gujarat	18	2880	11 5	65
Punjab	14	2310	10 11	40
Karnataka	22	3575	3 2	60
Tamilnadu	13	2054	7 6	50
AP	17	2788	20 21	75
MP	24	3720	8 7	55
UP	21	3360	9 5	80

Ques A. AP
B. Punjab

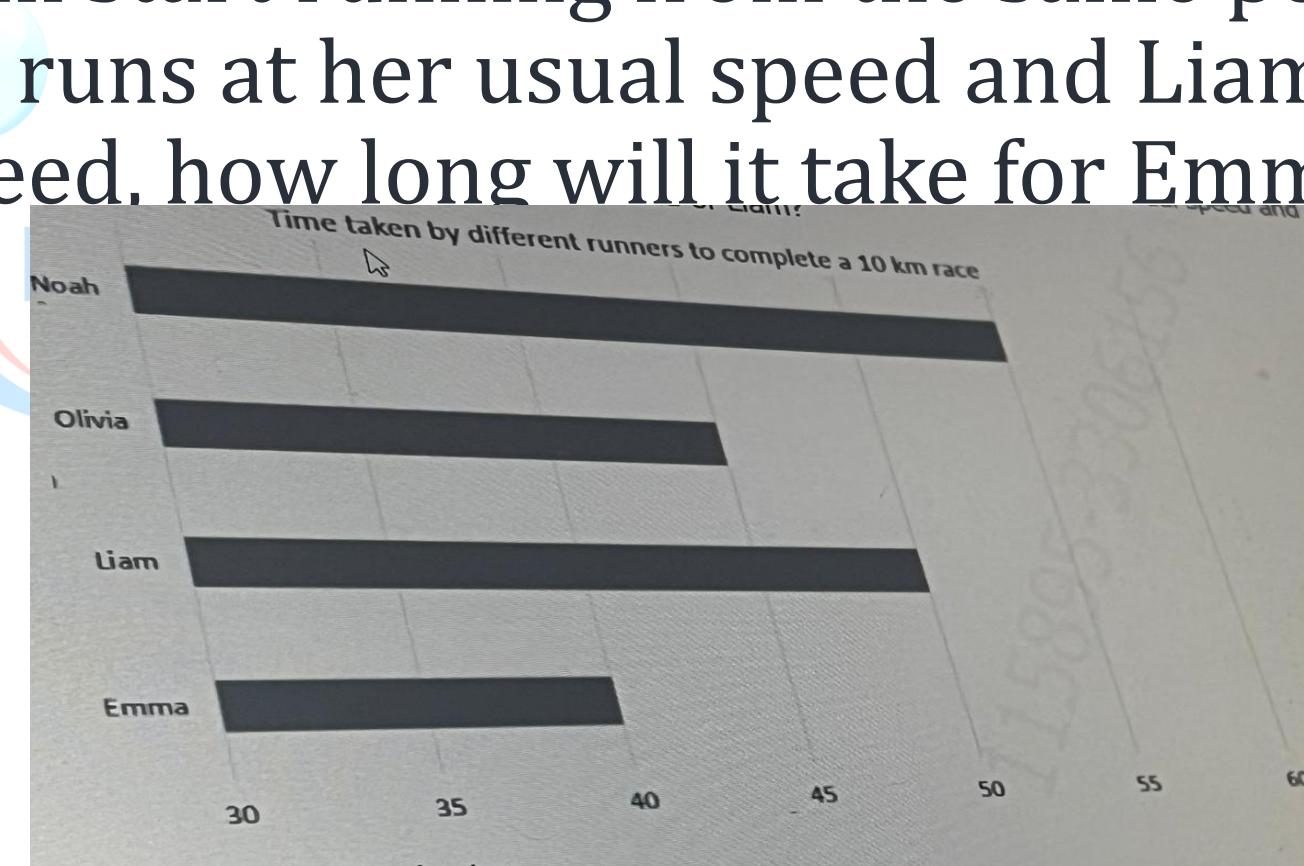
The following bar chart represents the monthly website traffic (in thousands of visits) of an online store for the first four months of 2024. Calculate the percentage increase in website traffic from January to February.

- A. 6.66 %
- B. 33.33 %
- C. 12.22 %
- D. 9.99 %



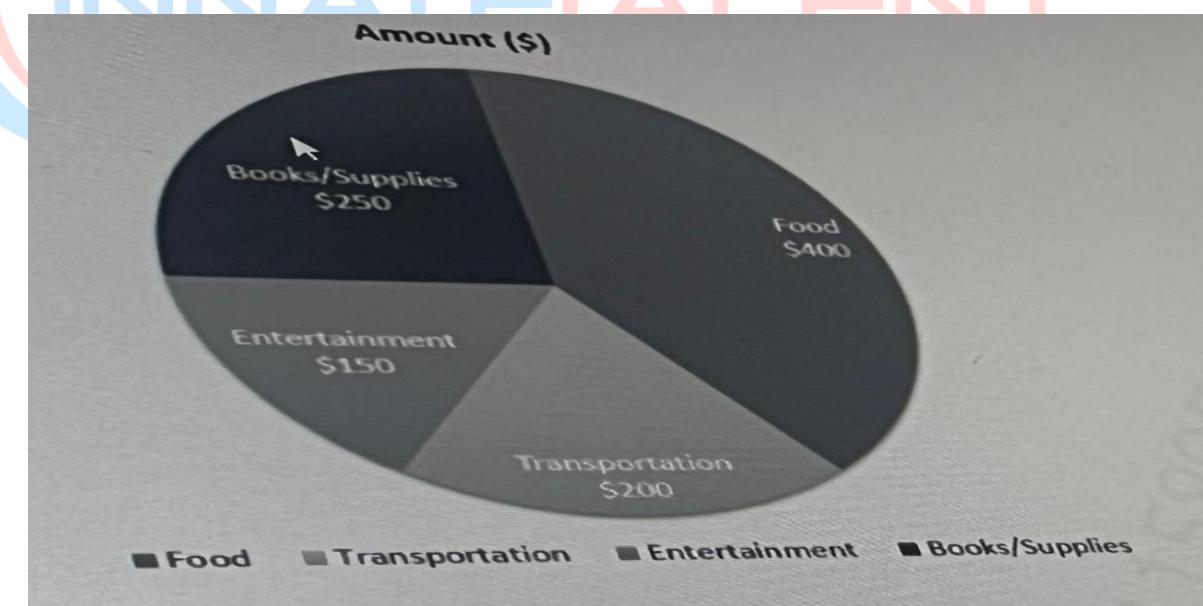
The following horizontal bar chart represents the time taken (in minutes) by four different runners to complete a 10 km race. Emma and Liam start running from the same point at the same time. If Emma runs at her usual speed and Liam runs at 80% of his usual speed, how long will it take for Emma to be 5 km ahead of Liam?

- A. 48.24 mins
- B. 55.56 mins
- C. 60.64 mins
- D. 42.72 mins



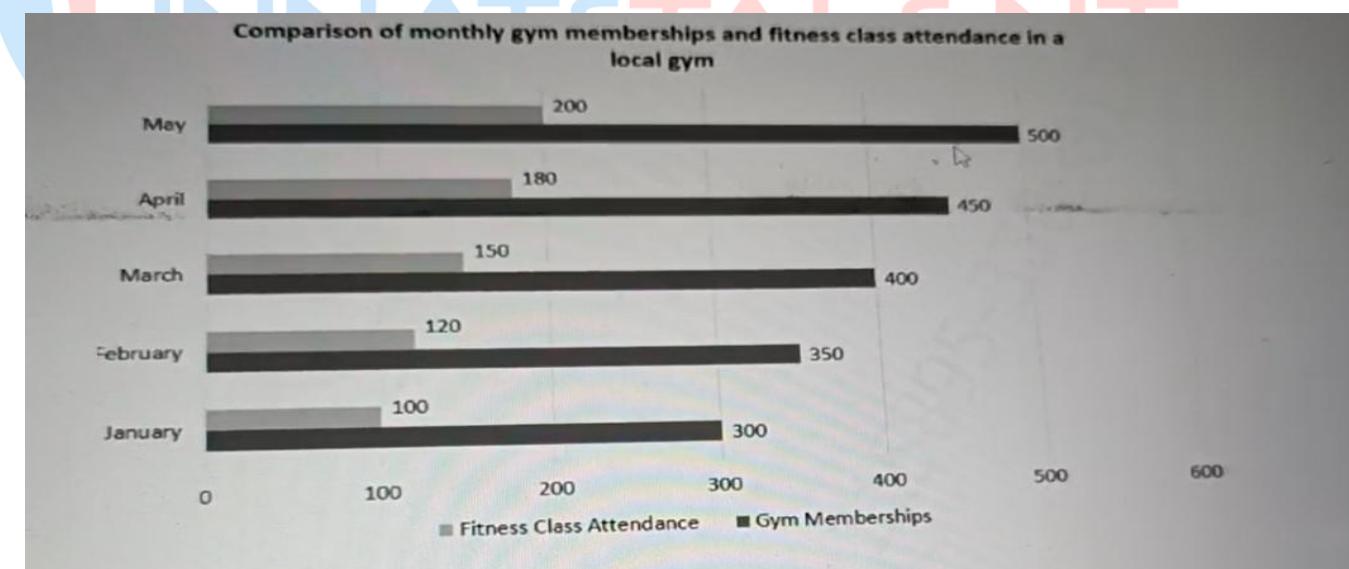
The following pie chart illustrates the distribution of monthly expenses for a college student. The expenses are divided into four categories: Food, Transportation, Entertainment, and Books/Supplies. What is the ratio of the amount spent on Transportation to the amount spent on Entertainment?

- A. $3/5$
- B. $5/7$
- C. $4/3$
- D. $2/5$



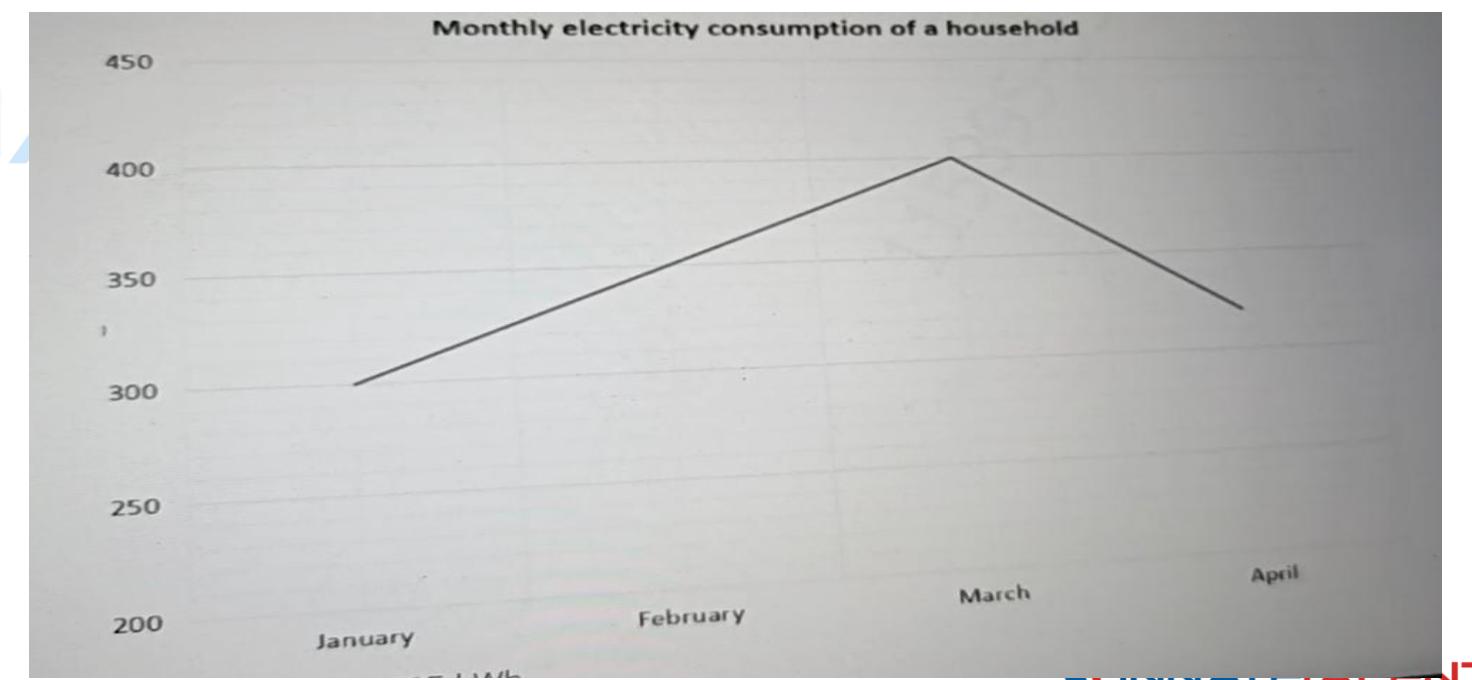
The following double horizontal bar chart compares the monthly number of gym memberships and fitness class attendance in a local gym over five months in 2024. Calculate the ratio of the percentage increase in gym memberships to the percentage increase in fitness class attendance from January to May.

- A. $\frac{4}{3}$
- B. $\frac{1}{3}$
- C. $\frac{5}{3}$
- D. $\frac{2}{3}$



The following line chart represents the monthly electricity consumption (in kWh) of a household for the first four months of 2024. Calculate the mean and median electricity consumption for the first four months of 2024.

- A. 342 kWh, 405 kWh
- B. 342.5 kWh, 615 kWh
- C. 342.5 kWh, 335 kWh
- D. 340 kWh, 335 kWh



The following data shows the number of people staying in five different localities and the percentage breakup of men, women and children.

Locality	Total No. of People	Percentage		
		Men	Women	Children
Fateh Nagar	5640	55	35	10
Ganesh Nagar	4850	34	44	22
Hari Nagar	5200	48	39	13
Indra Nagar	6020	65	25	10
Janak Nagar	4900	42	41	17

The number of men staying in which locality is minimum?

- A. Fateh Nagar
- B. Janak Nagar
- C. Indra Nagar
- D. Ganesh Nagar

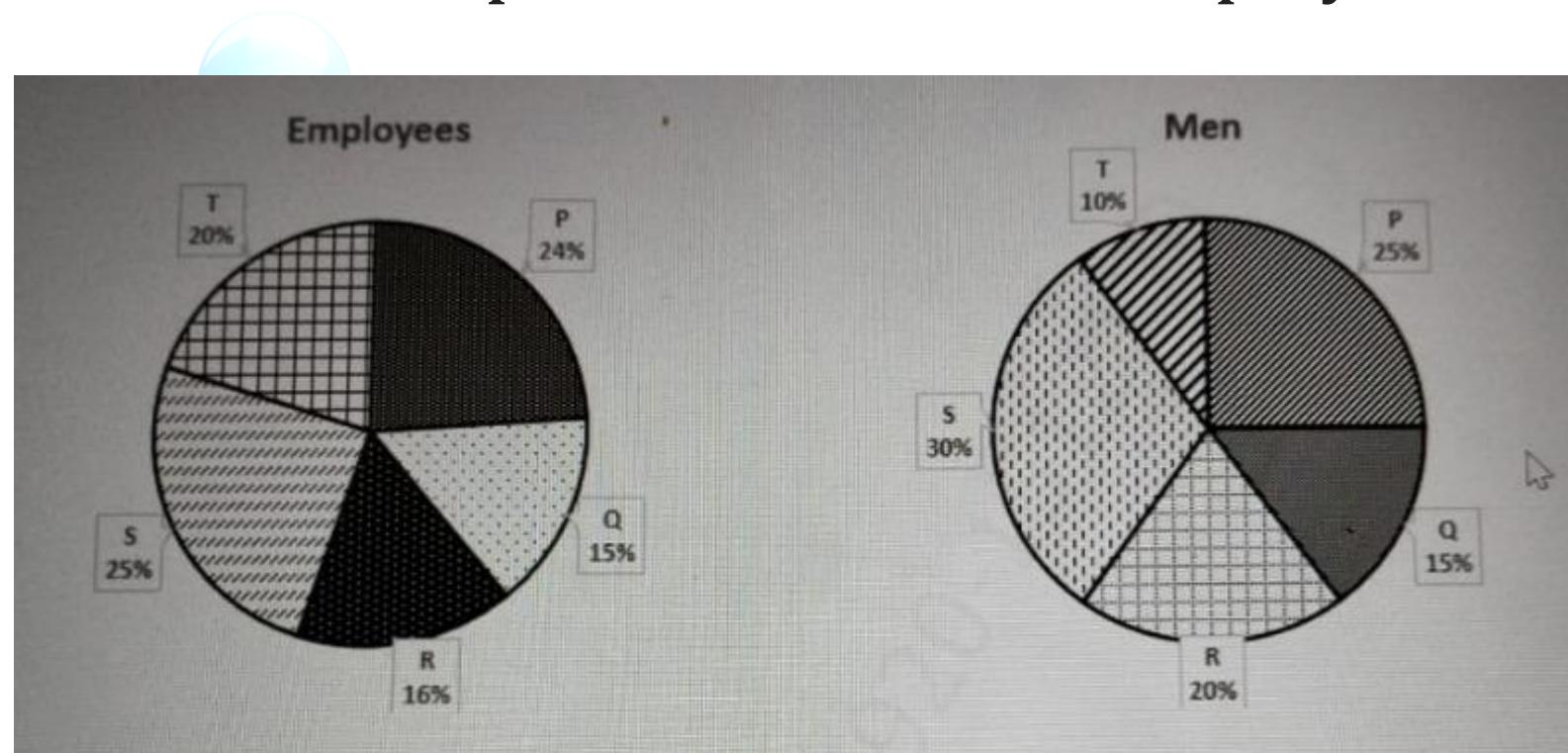


What is the difference between the total number of men and children together in Indra Nagar and Hari Nagar together?

- A. 1911
- B. 1343
- C. 1864
- D. 1265



The first pie-chart represents the percentage break-up of employees in all the five departments of a company, and the second pie-chart represents the department-wise breakup of the total male employees in the company.

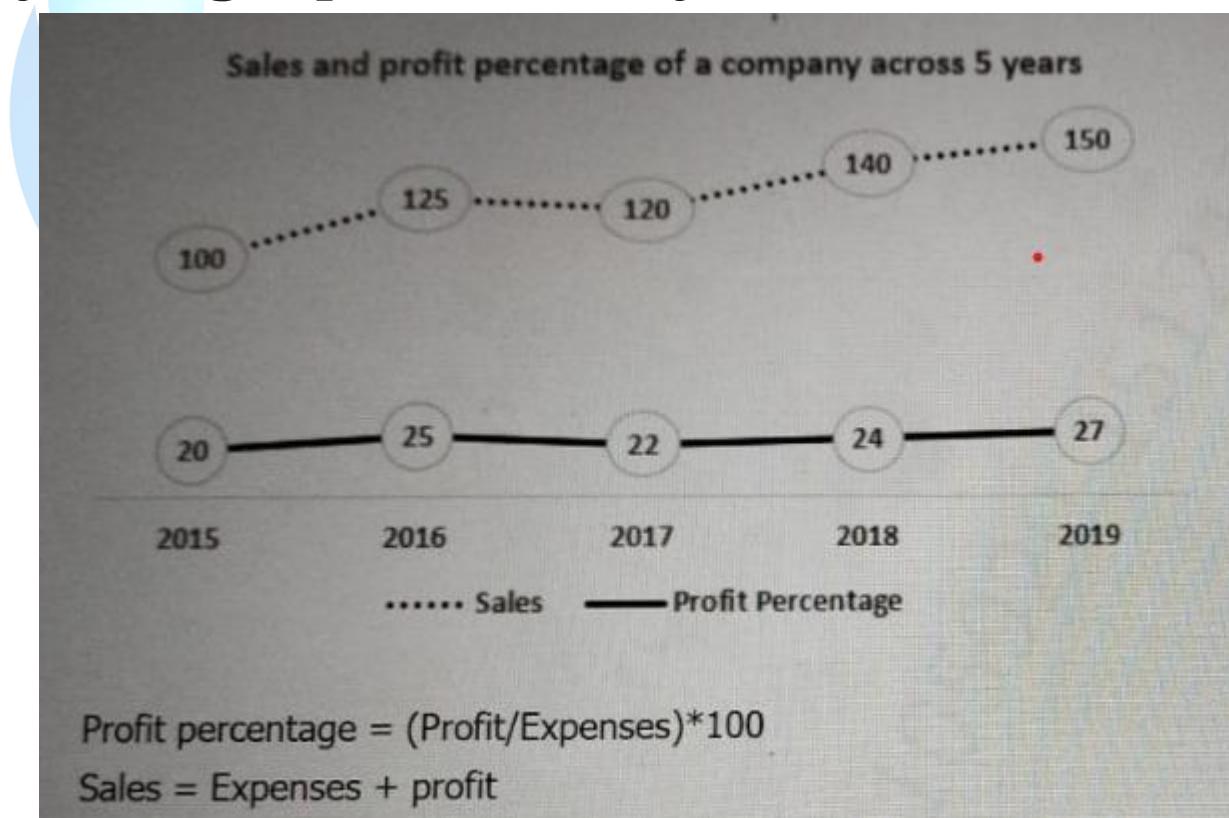


What could be the least number of women in all the departments together?

- A. 300
- B. Cannot be determined
- C. 450
- D. 200



The following line graph gives the sales and profit percentage of a company across five years from 2015. The value of sales in 2015 have been taken as 100. All values in the succeeding years are indexed to the value in 2015. Study the graph carefully and answer the questions that follow.



What was the percentage increase in expenses from 2016 to 2018?

- A. 0.0164
- B. 0.0425
- C. 0.0864
- D. 0.129



The table gives the number of residents in each locality and the percentage of residents in the locality who read newspap of The Times of India, The Dawn, and The Bharat Express.

Locality	Number of residents	The Times of India	The Dawn	The Bharat Express
A	2000	30%	25%	45%
B	1500	40%	20%	40%
C	3000	25%	25%	50%
D	2400	40%	30%	30%
E	4000	10%	30%	60%

Study the table carefully and the answer the questions that follow.

What is the difference between the number of residents who read The Times of India in locality A and The Dawn in locality D?

- A. 720
- B. 600
- C. 240
- D. 120



The table represents percentage of students in the classes, who passed in the annual exams in the year 2019-20 Study the table carefully and the answer the questions that follow.

Class	Number of students	Percentage of students who passed
7	240	75%
8	180	60%
9	200	70%
10	160	50%
11	225	60%
12	300	80%

[Note: The students either passed or failed in the examination, and each student appeared for the exam]

How many students of class 8 failed in the annual exam?

- A. 60
- B 72
- C. 82
- D.108



DIFFERENTIATE

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FROM OTHERS !!



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