

INSPECTOR BABA



TOP 100 HARD QUESTIONS: MATHS

CHAPTER - WISE

(CGL TIER I – 2024 : ENGLISH)

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MOST HARD QUESTIONS ASKED

IN CGL PRE 2024 (ALL SHIFTS)

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(Note: - “The **hardness level**, expressed as a percentage, given against each question is calculated as 100 minus the total percentage of correct attempts by aspirants, thereby representing the total percentage of wrong attempts/ skipped.”)

There might be some corrections in this PDF; please let us know, if you find any.

PROFIT AND LOSS

1.) A seller sold 19 cookies for ₹95 instead of 20 cookies in one kg, cheating a customer. What is the gain (in ₹) if the seller bought the cookies for ₹76?

Hardness Level: 85.53

- A. 28.2 B. 25.8 C. 22.8 D. 26.2

2.) Amit and Bilal buy goods for ₹1,500 and ₹2,000, respectively. Amit marks his goods up by $y\%$, while Bilal marks his goods up by $2y\%$ and offers a discount of $y\%$. If both make the same profit, then find the value of y .

Hardness Level: 83.72

- A. 12 B. 10.5 C. 11.5 D. 12.5

3.) S borrowed some amount from R and promised to pay him 8% interest. Then S invested the borrowed amount in a scheme, upon which he earned a profit of 5% after paying R, the principal amount with interest. How much percentage R would have gained, if he would have invested in the scheme directly?

Hardness Level: 81.20

- A. 13.4% B. 13% C. 14.4% D. 14%

4.) A shopkeeper has a fault of 100 g in a 3 kg weight. He sold 3 kg of potatoes to Charu using the same faulty weight for ₹46. The cost price of the potatoes for the seller was 12 per kg. How much profit (in ₹) did he earn on the potatoes?

Hardness Level: 76.31

- A. 10.2 B. 10 C. 11.6 D. 11.2

5.) If a shopkeeper sells sugar at ₹44.8 per kg, he is able to make a 12% profit. Due to water seepage, $\frac{1}{5}$ of the sugar is damaged. What should now be the selling price per kg of the rest of the sugar to have a 5% profit?

Hardness Level: 71.37

- A. 52.5 B. ₹49.5 C. 51.5 D. ₹48.5

6.) If Ram purchases a fan, he gets 8% discount, however, if he purchases three fans he gets 6% on the first, 10% on the second and 12% on the third. If the price paid by the Ram for three fans is ₹6,800, then what will be the marked price of each fan?

Hardness Level: 70.62

- A. ₹2,550 B. ₹2,450 C. ₹2,500 D. ₹2,400

7.) Samreen sells a keyboard for ₹1,260 at a profit of 25%, and another keyboard for ₹1,440 at a loss of 10%. What is her total gain or loss percentage?

Hardness Level: 67.81

- A. $3\frac{86}{163}\%$ Loss B. $3\frac{86}{163}\%$ Gain C. $3\frac{11}{27}\%$ Gain D. $3\frac{11}{27}\%$ Loss
-

SIMPLE INTEREST

8.) Aman borrows a sum of ₹192208 at the rate of 15% per annum simple interest. At the end of the first year, he repays 20196 towards return of principal amount borrowed. If Aman clears all pending dues at the end of the second year, including interest payment that accrued during the first year, how much does he pay (in ₹) at the end of the second year?

Hardness Level: 95.64

- A. 221777 B. 221757 C. 230028 D. 226645

(Mostly students had struggled with this type of questions, either attempted wrong or skipped. You are advised to practice more questions of this pattern.)

9.) Pranav borrows a sum of ₹335180 at the rate of 13% per annum simple interest. At the end of the first year, he repays ₹23060 towards return of principal amount borrowed. If Pranav clears all pending dues at the end of the second year, including interest payment that accrued during the first year, how much does he pay (in ₹) at the end of the second year?

Hardness Level: 94.62

- A. 393949 B. 388076 C. 398876 D. 396269

10.) A cell phone is available for Rs.600 or for Rs.300 cash down payment together with Rs.360 to be paid after two months. Find the rate of interest charged under this scheme.

Hardness Level: 69.98

- A. 120% B. 20% C. 60% D. 50%

11.) A trader owes a merchant ₹9,810 due in 1 year, but the trader wants to settle the account after 6 months. If the rate of simple interest is 9% per annum, how much cash (in ₹) should he pay?

Hardness Level: 69.41

- A. 9,450 B. 9,405 C. 9,540 D. 9,550

12.) A customer pays ₹975 in instalments. The payment is done each month ₹5 less than the previous month. If the first instalment is ₹100, how much time will be taken to pay the entire amount?

Hardness Level: 69.10

- A. 27 months B. 26 months C. 14 months D. 15 months

13.) In a bank, 6% interest is given on the deposited amount. The bank then invests the money in the stock market and is able to earn ₹30,000 for every ₹3,00,000. How much money is the bank earning finally if the total amount deposited in the bank is ₹60,00,000?

Hardness Level: 64.64

- A. ₹3,60,000 B. ₹3,00,000 C. ₹6,40,000 D. ₹2,40,000

TIME, SPEED AND DISTANCE

14.) Atul gives Vishu a head-start of 20 seconds in a 900 m race and beats him by 135 m. While running the same race again Atul gives a start of 189 m and beats him by 8 seconds. In how much time can Vishu complete the full race of 900 m?

Hardness Level: 87.29

- A. 3 minutes 10 seconds B. 3 minutes 30 seconds
C. 3 minutes 20 seconds D. 2 minutes 50 seconds

15.) M and N walk along a circular track. They start at 5:00 a.m. from the same point in the opposite directions. M and N walk at a speed of 5 rounds per hour and 2 rounds per hour, respectively. How many times will they cross each other before 6.30 a.m. on the same day?

Hardness Level: 83.03

- A. 3 B. 7 C. 10 D. 5

16.) Seema walks around a circular field at the rate of 3 rounds per hour, while Priya runs around it at the rate of 8 rounds per hour. They start in the same direction from the same point at 11:54 p.m. They shall first cross each other at:

Hardness Level: 75.78

- A. 12:06 p.m. B. 11:59 p.m. C. 12:00 a.m. D. 12:06 a.m.

17.) A boatman rows to a place 30 km distant and back in 14 hours. He finds that he can row 10 km with the stream at the same time as 4 km against the stream. Find the speed (in km/h) of the stream.

Hardness Level: 72.97

- A. $9/4$ B. $9/2$ C. $4/9$ D. $2/9$

18.) A thief takes off on his bike at a certain speed, after seeing a police car at a distance of 250 m. The police car starts chasing the thief and catches him. If the thief runs 1.5 km before being caught and the speed of the police car is 70 km/h then what is the speed of thief's bike (in km/h)?

Hardness Level: 69.36

- A. 65 B. 60 C. 55 D. 50

TIME AND WORK

19.) Pipe A takes $4/5$ of the time required by pipe B to fill an empty tank individually. When an outlet pipe C is also opened simultaneously with pipes A and B, it takes $4/5$ more time to fill the empty tank than it takes when only pipe A and pipe B are opened together. If it takes 40 hours to fill the tank when all the three pipes are opened simultaneously, in what time (in hours) will pipe C empty the full tank, operating alone?

Hardness Level: 89.13

- A. 50 B. 65 C. 75 D. 45

20.) A cistern can be filled by two pipes in 8 minutes and 10 minutes, separately. Both the pipes are opened together for a certain time, but due to an obstruction, only $\frac{5}{8}$ of the full quantity of water flowed through the former pipe and $\frac{3}{5}$ through the latter pipe. However, the obstruction was suddenly removed, and the cistern was filled in 3 minutes from that moment. How long did it take before the full flow began?

Hardness Level: 86.29

- A. $2\frac{6}{17}$ minutes B. $9\frac{6}{7}$ minutes C. $3\frac{1}{16}$ minutes D. $2\frac{30}{37}$ minutes

21.) The tank is filled by three pipes with different uniform flow rates. While the first two pipes are operating simultaneously, they fill the tank in the same duration that the third pipe takes to fill it alone. The second pipe can fill the tank 5 hours quicker than the first pipe, yet 4 hours slower than the third pipe. What is the time (in hours) needed for the first pipe to fill the tank?

Hardness Level: 83.91

- A. 18 B. 9 C. 15 D. 12

22.) Pipe Q can fill the tank in 60 hours while pipe R may fill in 45 hours. Q and R pipes are opened together for 6 hours after which pipe W is also opened to empty the tank. All three pipes are opened simultaneously for 24 hours to reach the half level mark. How much time (in hours) will pipe W alone take to empty the entire tank?

Hardness Level: 70.98

- A. 30 B. 42 C. 48 D. 36

23.) Two pipes A and B can fill a tank in 20 and 30 hours, respectively. Both pipes are opened to fill the tank, but when the tank is one-third full, a leak develops through which one-fourth of the water supplied by both pipes goes out. Find the total time (in hours) taken to fill the tank.

Hardness Level: 65.87

- A. $12\frac{1}{3}$ B. $14\frac{2}{3}$ C. 14 D. $12\frac{2}{5}$

TRIGONOMETRY

24.) $\frac{2 + \tan^2 2A + \cot^2 2A}{\sec 2A \cdot \operatorname{cosec} 2A}$ is equal to _____.

Hardness Level: 95.06

- A. $\sec 2A + \tan 2A$ B. $\sec 2A - \operatorname{cosec} 2A$
C. $\cot 2A - \operatorname{cosec} 2A$ D. $\sec 2A + \operatorname{cosec} 2A$

25.) If $p \cos A = 2q \sin A$ and $2p \operatorname{cosec} A - q \sec A = 3$ then the value of $p^2 + 4q^2$ is:

Hardness Level: 77.66

A. 3

B. 1

C. 2

D. 4

26.)

The value of the expression $\frac{1 - \sin(2t)}{1 + \sin(2t)} \times \frac{\cos(t) + \sin(t)}{\cos(t) - \sin(t)}$ is

Hardness Level: 77.32

A. $\frac{1 + \tan(t)}{1 - \tan(t)}$

B. $\frac{1 + 2\tan(t)}{1 - 2\tan(t)}$

C. $\frac{1 - 2\tan(t)}{1 + 2\tan(t)}$

D. $\frac{1 - \tan(t)}{1 + \tan(t)}$

27.) Find the value of $\tan 72^\circ - \tan 27^\circ - \tan 72^\circ \tan 27^\circ$.

Hardness Level: 72.22

A. -2

B. 0

C. -1

D. 1

28.) If $m = a \sec A$ and $y = b \tan A$, then find the value of $b^2 m^2 - a^2 y^2 + \frac{a^2 y^2}{b^2 m^2} + \cos^2 A$

Hardness Level: 70.4

A. $a^2 b^2 + 2$

B. $a^2 b^2$

C. $1 - a^2 b^2$

D. $a^2 b^2 + 1$

LINEAR EQUATIONS

29.) If the system of the following equations has the value of the variables as three consecutive integers, then the value of a is ____.

$$x - y + z = 2a$$

$$x + 4y - 2z = 3(4 - a)$$

$$2x - 3y + 4z = 6 - 2a$$

Hardness Level: 90.11

A. 2

B. 4

C. 1

D. 3

30.) For which of the following values of a and b do the given equations, have NO solution?

$$x - ay = 2 - a$$

$$(1 - a)x + 6y = a + b$$

Hardness Level: 83.03

A. $a = -3, b \neq 1$

B. $a = -3, b \neq -1$

C. $a = 3, b \neq -1$

D. $a = 3, b \neq 1$

31.) 2 biscuits and 1 chocolate cost ₹69. 2 chocolates and 3 cups of coffee cost ₹127. 3 biscuits, 4 chocolates and 2 cups of coffee cost ₹229. Find the total cost (in ₹) of 5 biscuits, 5 chocolates and 5 cups of coffee.

Hardness Level: 81.83

A. 345

B. 375

C. 304

D. 355

32.) For the equations $ax+(a^2+1)y=4$ and $4x+ay=a^2$, which of the following statements is TRUE?

Hardness Level: 81.83

A. If $a = -12$ then $x = 48, Y = 4$ are the solutions. B. If $a = 6$, then $X = \frac{325}{28} y = -\frac{25}{28}$ are the solutions. C. If $a = 6$, then $x = 48 Y = 4$ are the solutions. D. If $a = -12$, then $x = \frac{325}{28} y = -\frac{25}{28}$ are the solutions.

33.) Cindy bought 15 apples and 12 oranges and paid a sum of ₹447 for the purchase. Which of the statements given below is inconsistent with the information given in the previous statement, leading to no possible prices of the two fruits?

Hardness Level: 81.36

A. Purchased 10 apples and 13 oranges and paid a sum of 353

B. Purchased 35 apples and 28 oranges and paid a sum of 1,029

C. Purchased 25 apples and 20 oranges and paid a sum of 745

D. Purchased 12 apples and 8 oranges and paid a sum of ₹340

34.) Given a linear equation in two variables: $5x+7y-8=0$, which of the following linear equations, along with the given equation, forms a system of linear equations having no solution?

Hardness Level: 74.63

A. $7x+5y-8=0$

B. $10x+14y-16=0$

C. $5x-7y-8=0$

D. $5x+7y-16=0$

35.) Find the value of 'k' for which the system of equations $4x+6y=7$ and $6x + (k+4)y-21=0$ has a unique solution.

Hardness Level: 73.15

A. $k \neq 7$

B. $k=5$

C. $k=7$

D. $k \neq 5$

36.) If $0.4x+0.16y=1.7$ and $0.3x+0.12y=3.4$ then which of the following is correct?

Hardness Level: 72.25

A. The system has finitely many solutions but not unique.

B. The system has infinitely many solutions.

C. The system has no solution.

D. The system has unique solution.

37.) Find the values of 'a' and 'b' for which the system of equations $3x+y=3$ and $(a-b)x+(a+b)y = 3a+b-3$ has infinite solutions.

Hardness Level: 70.01

- A. $a=-3/2, b=2$ B. $a=3, b=-3/2$ C. $a=3, b=-2/3$ D. $a=2, b=-3/2$
-

GEOMETRY

38.) AB is the chord of the circle with centre O. A line segment DOC originating from a point D on the circumference of the circle in major segment meets AB produced at C such that $BC=OD$. If angle $BCO=30^\circ$, then angle AOD is:

Hardness Level: 91.58

- A. 80° B. 30° C. 60° D. 90°

39.) From a point T, a tangent TP at point P, is drawn to a circle with centre O. A secant TQR (point Q is near to point T) is drawn from the point T. $\triangle PQR$ is inscribed into the circle by joining the points P, Q and R. Draw lines OQ and OR. If $\angle PTQ$ is 27° and $\angle TPQ=55^\circ$, what is the degree measure of $\angle ROQ$?

Hardness Level: 90.22

- A. 86 B. 94 C. 98 D. 82

40.) If the length of a common external tangent to two circles is 9 and that of a common internal tangent is 5, then the product of the radii of the two circles is:

Hardness Level: 85.85

- A. 10 B. 8 C. 14 D. 12

41.) On a circle of radius 7 units, PQ and QR are chords of length 7 units each. What is the length of the chord PR in units?

Hardness Level: 84.25

- A. $\frac{28}{\sqrt{3}}$ B. $\frac{14}{\sqrt{3}}$ C. $\frac{7}{\sqrt{3}}$ D. $\frac{21}{\sqrt{3}}$

42.) AB is a chord of length 32 cm of a circle of radius 20 cm, the tangents at A and B intersect at a point T. Find length TA (rounded off to two digits after decimal).

Hardness Level: 83.86

- A. 36.50 cm B. 21.33 cm C. 26.67 cm D. 19.93 cm

43.) A secant PAB is drawn from an external point P to the circle with the centre at O, intersecting it at A and B. If $OP=17$ cm, $PA=12$ cm and $PB=22.5$ cm, then the radius of the circle is:

Hardness Level: 82.53

- A. $\sqrt{23}$ cm B. $\sqrt{17}$ cm C. $\sqrt{21}$ cm D. $\sqrt{19}$ cm

44.) R is a point outside a circle and is 18 cm away from its centre. A secant drawn from the point R intersects the circle at points A and B in such a way that $RA=7$ cm and $AB=5$ cm. The radius of the circle (in cm) is:

Hardness Level: 79.99

- A. $3\sqrt{15}$ B. $5\sqrt{15}$ C. $4\sqrt{15}$ D. $7\sqrt{15}$

45.) In a quadrilateral ABCD, $AB=BC$, $AD=DC$. $\angle ABD=68^\circ$, $\angle ADB=(2y-7)^\circ$, $\angle BDC=33^\circ$, $\angle DBC=(3x+2)^\circ$. Then the value of $2x+3y$ is:

Hardness Level: 76.77

- A. 118 B. 144 C. 104 D. 108

46.) In triangle ABC, D is the mid-point of BC. If DL perpendicular to AB and DM perpendicular to AC such that $DL=DM$. then the triangle will be:

Hardness Level: 73.49

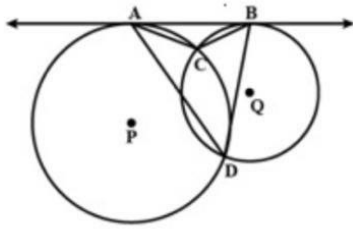
- A. obtuse angle triangle B. isosceles triangle
C. right angled triangle D. equilateral triangle

47.) P and Q are centres of two circles whose radii are 7 cm and 3 cm, respectively. If the direct common tangents to the circles meet PQ extended at A, then A divides PQ -----.

Hardness Level: 72.01

- A. internally in the ratio 3: 7
B. externally in the ratio 7: 3
C. internally in the ratio 7: 3
D. externally in the ratio 3: 7

48.) Two circles, centred at P and Q intersect at two points C and D. AB is tangent to the two circles at A and B. If $\angle ADB = 68^\circ$, then $\angle ACB =$ _____.



Hardness Level: 70.91

- A. 124° B. 112° C. 132° D. 102°

49.) A triangle ABC is made on a circle, where AB is diameter of the circle. If BC is equal to the radius of the circle and $\angle ABC = x \angle BAC$, then x is:

Hardness Level: 69.69

- A. 2 B. 2.5 C. 1 D. 1.5

50.) The points P and S are on the same side of the line segment QR, such that $\angle PQR = 90^\circ$, $\angle SRQ = 90^\circ$ and $PQ = SR$. Select the correct statement.

Hardness Level: 68.46

- A. $\triangle PQR \cong \triangle SRQ$ by SAS B. $\triangle PQR \cong \triangle SRQ$ by RHS
C. $\triangle PQR \cong \triangle SQR$ by SAS D. $\triangle PQR \cong \triangle SQR$ by RHS

51.) If a triangle has a perimeter of 52 units, then all its sides have length _____ units.

Hardness Level: 67.92

- A. <20 B. <24 C. <26 D. <18

52.) In a circle with center O, an arc ABC subtends an angle of 138° at the centre of the circle. The chord AB is produced to a point P. Then, the measure of $\angle CBP$ is:

Hardness Level: 67.62

- A. 42° B. 111° C. 108° D. 69°

MENSURATION (AREA AND VOLUME)

53.) What is the central angle of a sector of a circle whose area and perimeter are, respectively, equal to 209 cm^2 and 63 cm if it is given that its radius is a non-negative integer (roundup to one decimal place)?

Hardness Level: 94.38

- A. 49.5° B. 51.5° C. 53.5° D. 55.5°

54.) A cylindrical tank of radius 14 cm is full of water. If 616 litres of water are drawn out, then the water level in the tank is dropped by _____ m. (Take $\pi=22/7$)

Hardness Level: 84.37

- A. 100 B. 10 C. 1 D. 1000

55.) A rectangular courtyard is $4\text{m } 95\text{cm}$ long and $16\text{m } 65\text{cm}$ broad. It is to be paved with the square tiles of the same size. Find the least number of such square tiles required to pave the rectangular courtyard.

Hardness Level: 78.81

- A. 877 B. 407 C. 944 D. 388

56.) The side of an equilateral triangle is 28 cm . Taking each vertex as the centre, a circle is described with a radius equal to half the length of the side of the triangle. Find the area of that part of the triangle which is not included in the circles (use $\pi=22/7$ and $\sqrt{3}=1.73$).

Hardness Level: 78.35

- A. 39.08 cm^2 B. 31.08 cm^2 C. 38.08 cm^2 D. 30.89 cm^2

57.) A cuboid of dimensions 50 cm , 150 cm , 175 cm can be divided into how many identical largest cubes?

Hardness Level: 72.04

- A. 75 B. 84 C. 90 D. 85

DATA INTERPRETATION

58.) Study the given table and answer the question follows: -

The table represents the number of scooters (in thousands) manufactured by four companies A, B, C and D from the period 2012 to 2015.

Years	A	B	C	D
2012	360	420	380	520
2013	580	940	570	980
2014	1000	780	1020	1090
2015	1240	950	1180	1660

The average number of scooters produced by company D is what per cent (rounded off to 2 decimal places) more than the combined average number of scooters produced by the three companies A, B, and C?

Hardness Level: 91.34

- A. 27.25% B. 52.75% C. 35.35% D. 44.66%

59.)

The table below shows the production of three types of cars (A, B and C) manufactured (in thousands) by an automobile company over the years.

Year	A	B	C
2012	1750	1880	1900
2013	1800	2950	2070
2014	2950	3020	3150
2015	3100	3240	3290

The average number of A-type cars produced by the company during 2012 to 2014 is what percent (rounded off to the 1 decimal place) less than the combined average number of B-type and C-type cars produced by the company from 2013 to 2015?

Hardness Level: 90.36

- A. 36.6% B. 28.4% C. 25.5% D. 26.6%

60.)

Read the given information and answer the question that follows.

The following table gives the percentage of marks obtained by seven students in six different subjects in an examination.

The number in the brackets give the maximum marks in each subject.

Student	Subject (Max. Marks)					
	Maths	Chemistry	Physics	Geography	History	Computer Science
	(150)	(130)	(120)	(100)	(60)	(40)
Ayush	90	50	90	60	70	80
Aman	100	80	80	40	80	70
Sajal	90	60	70	70	90	70
Rohit	80	65	80	80	60	60
Muskan	80	65	85	95	50	90
Tanvi	70	75	65	85	40	60
Tarun	65	35	50	77	80	80

If someone secured all the highest scores that have been obtained by some student or the other in the six subjects as given in the table above, what would be the exact overall percentage score obtained by that student?

Hardness Level: 89.85

A. $90\frac{5}{6}\%$

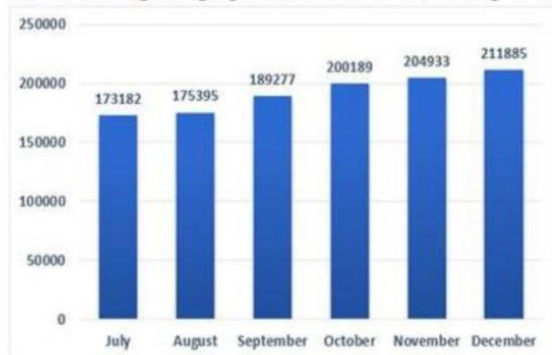
B. 95.16%

C. 91%

D. $91\frac{1}{6}\%$

61.)

The following bar graph shows the circulation growth of a magazine ABC from July 2022 to December 2022.



During October to December there was an even growth rate, the average of which, is (correct up to one decimal place):

Hardness Level: 88.62

A. 2.4%

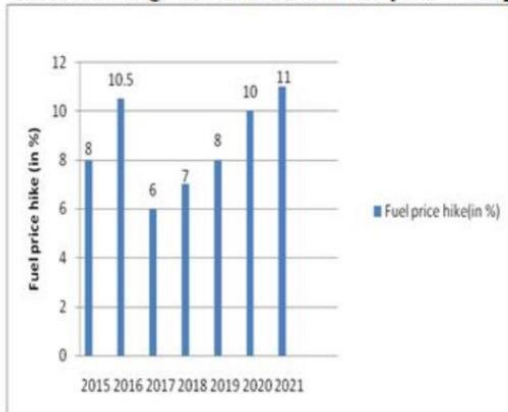
B. 2.9%

C. 3.8%

D. 3.2%

62.)

The following bar chart shows the year-wise percentage hike in the fuel price with respect to the previous year.



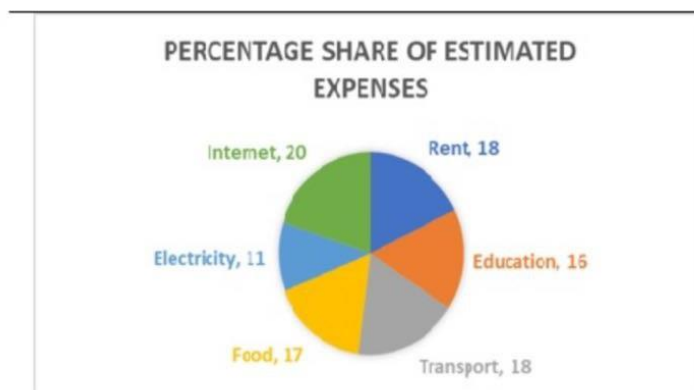
In how many years did the fuel prices NOT rise?

Hardness Level: 85.82

- A. 5 B. 0 C. 1 D. 2

63.)

The below figure shows the estimated expenses of a family whose total estimated expenditure was ₹2,50,000. Study the figure and answer the question that follows.



It was found that the actual expenditure on electricity was 10% more than the estimated expenditure, and the actual expenditure on rent was 20% less than estimated. All other expenses were same as that of the estimates. What was the total actual expenditure?

Hardness Level: 84.39

- A. ₹2,40,750 B. ₹2,43,750 C. ₹2,48,750 D. ₹2,52,500

64.)

The given table shows the expenditure of a company (in lakh rupees) per annum over the years.

Year	Salary	Fuel and transport	Bonus	Interest on loan	Taxes
2005	212	78	4.00	24.6	88
2006	225	98	4.25	29.7	110
2007	236	105	4.75	36.8	125
2008	247	125	5.55	42.3	103
2009	295	145	6.25	49.6	118
2010	325	155	6.85	58.4	135

The total expenditure on all these categories in 2006 is what percentage (rounded off to two places of decimals) of the total expenditure in 2009?

Hardness Level: 83.34

- A. 76.07% B. 66.09% C. 66.07% D. 76.09%

65.)

Study the given table and answer the question that follows.

The given table shows the number of candidates who appeared (both male and female) in a Public Examination and the percentage of those who qualified in the examination from two states X and Z. Few values are missing in the table (indicated by -----). You will be required to fill them up according to the question.

Year	State X		State Z	
	Number of appeared candidates	Percentage of qualified candidates	Number of appeared candidates	Percentage of qualified candidates
2008	480	70%	-----	70%
2009	560	75%	-----	80%
2010	-----	60%	650	50%
2011	450	89%	720	72%
2012	790	-----	660	-----

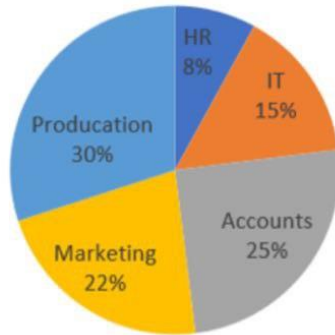
The number of appeared candidates from State Z increased by 100% from 2008 to 2009. If the total number of qualified candidates from State Z in 2008 and 2009 together is 552, what is the number of appeared candidates from State Z in 2009?

Hardness Level: 80.40

- A. 240 B. 600 C. 480 D. 360

66.)

The following pie chart shows the percentage distribution of a total of 1600 employees in different departments of a company. The table shows the ratio of male to female employees in different departments. Study the information and answer the question that follows.



Departments	Male : Female
HR	3 : 5
IT	2 : 3
Accounts	3 : 7
Marketing	7 : 4
Production	5 : 3

What is the percentage of the number of employees in production department to the number of female employees of all the departments taken together? (correct to one decimal place)

Hardness Level: 79.99

- A. 44.9% B. 64.3% C. 50.7% D. 59.1%

67.)

Study the given table and answer the question that follows.

The given table shows the production of three types of cars (A, B and C) manufactured (in thousands) by an automobile company over the years.

Year	A	B	C
2015	840	680	890
2016	900	750	960
2017	760	620	1000
2018	800	540	1200

For all the years from 2015 to 2018, the average production of B-type cars is how much less (in thousands) than that of the combined average production of A-type and C-type cars?

For all the years from 2015 to 2018, the average production of B-type cars is how much less (in thousands) than that of the combined average production of A-type and C-type cars?

Hardness Level: 75.46

- A. 271.25 B. 314.75 C. 284.55 D. 238.5

68.)

The following table shows the sale (in lakh rupees) of six commodities in a provision store from August 2012 to October 2012.

Month/Commodity	Dry Fruits	Tea	Pulses	Sugar	Flour	Rice
August	27	24	45	48	55	42
September	32	15	34	42	33	23
October	25	30	42	47	49	27

The total combined sale of dry fruits, sugar and rice for the period from August 2012 to October 2012 is what percentage (rounded off to the nearest whole number) of the total combined sale of tea, pulses and flour?

Hardness Level: 74.90

- A. 96% B. 94% C. 95% D. 98%

69.)

Five different companies, P, Q, R, S and T, manufacture plastic and wooden bats. These bats are labelled as Brand A or Brand B. The given table shows the number of wooden bats as a percentage of the total bats manufactured by each company. It also shows the ratio of plastic bats labelled as Brand A to Brand B. Each company manufactures 1,00,000 bats. Study the table carefully and answer the question that follows.

Company	Wooden bats	Brand A : Brand B
P	65%	3 : 7
Q	70%	7 : 8
R	60%	19 : 6
S	70%	7 : 8
T	50%	2 : 3

Taking all companies together, how many plastic bats of Brand B have been manufactured?

Hardness Level: 74.37

- A. 90,500 B. 80,500 C. 96,100 D. 86,100

70.)

Study the given table and answer the question that follows.

The total money spent in advertisement (in ₹) and total number of advertisements in different newspapers given by a company for five years (2018 to 2022) is given in the below table.

Year	Total Money Spent in ₹ in Advertisement			Total No of Advertisements		
	NY Times	The Telegraph	Others	NY Times	The Telegraph	Others
2018	3,50,000	3,60,000	2,10,000	10	12	15
2019	4,80,000	3,45,000	2,89,000	12	15	17
2020	6,15,000	4,00,000	5,76,000	15	20	36
2021	7,60,000	4,80,000	4,40,000	19	24	22
2022	14,00,000	3,50,000	3,09,000	38	18	30

What is the ratio of the money spent on each of the advertisements taken one from each of NY times, The Telegraph and Others for the year 2021 to that of the money spent on each of the advertisements taken one from each of NY times, The Telegraph and Others for the year 2018?

Hardness Level: 73.30

A. 79:80

B. 80:79

C. 71:80

D. 80:71

71.)

The given table shows the expenditure (in crore ₹) of three companies A, B and C and the percentage profit of these companies in different years. Given that:

$$\text{Income} = \text{Expenditure} + \text{Expenditure} \times \frac{\text{Profit \%}}{100}$$

Years	Company A		Company B		Company C	
	Expenditure	Profit	Expenditure	Profit	Expenditure	Profit
2002	24	50%	20	40%	40	45%
2003	30	45%	15	25%	50	55%
2004	36	40%	25	35%	60	65%
2005	40	60%	35	48%	80	75%

What is the difference (in crore ₹) between the profits of Company A and Company B in the year 2005?

Hardness Level: 72.13

A. 12.5

B. 8.3

C. 7.2

D. 10.4

ALGEBRA

72.) A function of two variable varies directly with x and inversely with y . Determine function when $x=5$ and $y=3$ Given that, for $x=0$ and $y=1$, $f=15$ and for $x=1$ and $y=15$, $f=2$.

Hardness Level: 93.34

- A. 10 B. 15 C. 5 D. 2

73.) If $x^2+1=x$ then the value of $(x^{14}+x^8+1)$ is:

Hardness Level: 82.42

- A. 0 B. 3 C. 1 D. 2

74.) ' x ' varies directly with the cube of ' y ', and inversely with the square of ' z '. If $x=1/36$ when $y=2$ and $z=3$, then what is the value of $800x$ when $y=3$ and $z=5$?

Hardness Level: 70.32

- A. 27 B. $9/800$ C. 9 D. $800/9$
-

AGE

75.) In a family, the combined age of husband, wife and a son is 90 years. The husband is the oldest. The difference in the ages of the husband and wife is $1/3$ rd the age of their son. After 10 years, the age of the son would be half the age of his father. What is the present age of his mother (in years)?

Hardness Level: 85.82

- A. 40 B. 35 C. 30 D. 45

76.) Amit's father is aged five times more than Amit. After 6 years, he would be three and a half times of Amit's age. After further 9 years, how many times of Amit's age would he be?

Hardness Level: 79.38

- A. $3\frac{2}{7}$ times B. $2\frac{1}{4}$ times C. $2\frac{3}{4}$ times D. $2\frac{3}{7}$ times

PERCENTAGE

77.) In an election between two candidates, $y\%$ of the voters did not vote. 10% of the votes cast were declared invalid, while all the valid votes were cast in favour of either of the two candidates. The candidate who got 59.375% of the valid votes cast was declared elected by 2484 votes. If the number of people eligible to vote in that election was 16,000, what is the value of y ?

Hardness Level: 93.33

- A. 7.5 B. 8.4 C. 7.2 D. 8

78.) Every month, a man consumes 20 kg of rice and 8 kg of wheat. The price of rice is 20% of the price of wheat, resulting in a total expenditure of ₹300 per month for rice and wheat combined. If the price of wheat is increased by 20%, what percentage reduction in rice consumption is needed to maintain the same expenditure of ₹300? (Given that price of rice and consumption of wheat is constant.)

Hardness Level: 70.80

- A. 24% B. 40% C. 22% D. 38%
-

DISCOUNT

79.) Ramesh purchased some items from a dealer on 19 November 2019. The bill generated was for ₹5,480. He had also purchased some items on 10 November 2019 having the bill value of ₹9,800. He cleared both the bills this time and paid the total amount in cash. If the dealer gives a scheme of 2% discount on the payments done within 10 days and 5% for the payments made in cash at the time of purchase, then find the amount paid by Ramesh on 19 November 2019.

Hardness Level: 87.85

- A. ₹14,850 B. ₹14,810 C. ₹14,890 D. ₹14,950
-

NUMBER SYSTEM

80.) The five-digit number $45yz0$ is divisible by 40. What is the maximum possible value of $(y+z)$?

Hardness Level: 65.05

- A. 17 B. 15 C. 18 D. 16

AVERAGE

81.) A stock portfolio consists of four stocks. Stock A represents 20% of the portfolio and has a return of 6%. Stock B represents 30% of the portfolio and has a return of 8%. Stock C represents 20% of the portfolio and has a return of 4%. Stock D represents the remaining 30% of the portfolio and has a negative-return of 5%. What is the average return of the portfolio?

Hardness Level: 71.67

- A. 2.9% B. 3.2% C. 2.6% D. 3.4%

82.) The average of the squares of the first 45 natural numbers is

Hardness Level: 68.73

- A. 699.67 B. 697.67 C. 696.67 D. 698.67
-

RATIO AND PROPORTION

83.) There are y yellow marbles and b blue marbles in a box. 18% of the yellow marbles were added to 24% of the blue marbles, and the total was 30. Three times the number of yellow marbles exceeds two times the number of blue marbles by 200. What is the ratio of y^2 to b^2 ?

Hardness Level: 73.67

- A. 2:1 B. 6:5 C. 4:1 D. 5:2

84.) The salaries of P and Q together amount to ₹9,60,000. P and Q save 64% and 44%, respectively of their individual salaries. If P's expenditure is 1.5 times Q's expenditure, then what is the ratio of P's salary to Q's salary?

Hardness Level: 72.88

- A. 3:7 B. 7:3 C. 3:2 D. 2:3

85.) A payment of ₹120 is made with ₹10, ₹5 and 2 coins. A total of 25 coins are used. Which of the following is the number of ₹10 coins used in the payment?

Hardness Level: 82.66

- A. 10 B. 8 C. 6 D. 4

86.) R pays ₹100 to P with ₹5, 2 and 1 coins. The total number of coins used for paying are 40. What is the number of coins of denomination 5 in the payment?

Hardness Level: 67.49

A. 13 B. 18 C. 17 D. 16

87.) The incomes of P, Q and R are in the ratio 10:12:9 and their expenditures are in the ratio 12:15: 8. If Q saves 25% of his income, then what is the ratio of the savings of P, Q and R?

Hardness Level: 67.19

A. 15:14:21 B. 21:15:14 C. 21:14:15 D. 14:15:21

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ANSWER KEY:-

1. C	19. A	37. B	55. B	73. B
2. D	20. A	38. D	56. B	74. A
3. B	21. C	39. A	57. B	75. B
4. D	22. D	40. C	58. C	76. D
5. A	23. B	41. D	59. D	77. D
6. C	24. B	42. D	60. D	78. B
7. B	25. D	43. D	61. B	79. B
8. D	26. D	44. C	62. B	80. D
9. D	27. D	45. C	63. B	81. A
10. A	28. D	46. B	64. A	82. B
11. B	29. C	47. B	65. C	83. C
12. D	30. C	48. B	66. D	84. B
13. D	31. D	49. A	67. A	85. B
14. C	32. A	50. A	68. A	86. A
15. C	33. B	51. C	69. C	87. D
16. D	34. D	52. D	70. B	
17. A	35. D	53. A	71. C	
18. B	36. C	54. B	72. A	

Practice: -

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