Q1. When 335 is added to 5A7, the result is 8B2. 8B2 is divisible by 3. What is the largest possible value of A?

(a) 8 (b) 2
(c) 1 (d) 4

Q2. The greatest 4-digit number exactly divisible by 10, 15, 20 is

(a) 9990 (b) 9960
(c) 9980 (d) 9995

Q3. Which one of the numbers is divisible by 25?

(a) 303310 (b) 373355
(c) 303375 (d) 22040

Q4. Find the sum of $\left(1-\frac{1}{n+1}\right)+\left(1-\frac{2}{n+1}\right)+\left(1-\frac{3}{n+1}\right)+\ldots\ldots\left(1-\frac{n}{n+1}\right)$

(a) n (b) $\frac{1}{2}$n
(c) (n + 1) (d) $\frac{1}{2}$(n + 1)

Q5. In a class there are 'z' students. Out of them 'x' are boys. What part of the class is composed of girls?

(a) $\frac{x}{z}$ (b) $\frac{z}{x}$
(c) $1-\frac{x}{z}$ (d) $\frac{x}{z}-1$

Q6. If the students of 9th class are arranged in rows of 6, 8, 12 or 16, no student is left behind. Then the possible number of students in the class is

(a) 60 (b) 72
(c) 80 (d) 96

Q7. The unit digit in 3 × 38 × 537 × 1256 is

(a) 4 (b) 2
(c) 6 (d) 8

Q8. If a clock strikes appropriate number of times at each hour, how many times will it strike a day?

(a) 300 (b) 156
(c) 68 (d) 78

Q9. Find the value of $\sqrt{30+\sqrt{30+\sqrt{30+....}}}$

(a) 5 (b) $3\sqrt{10}$

(c) 6 (d) 7

Q10. The odd term in the sequence 0, 7, 26, 63, 124, 217 is

(a) 217 (b) 7

(c) 26 (d) 63

Q11. If x men can do a piece of work in x days, then the number of days in which y men can do the same work is

(a) xy days (b) $\frac{y^2}{x}$ days

(c) $\frac{x^2}{y}$ days (d) x^2y days

Q12. Three persons undertake to complete a piece of work for Rs1,200. The first person can complete the work in 8 days, second person in 12 days and third person in 16 days. They complete the work with the help of a fourth person in 3 days. What does the fourth person get?

(a) Rs 180 (b) Rs 200

(c) Rs 225 (d) Rs 250

Q13. Two workers A and B working together completed a job in 5 days. If a worked twice as efficiently as he actually did and B worked 1/3 as efficiently as he actually did, the work would have been completed in 3 days. To complete the job alone, A would require.

(a) $5\frac{1}{5}$ days (b) $6\frac{1}{4}$ days

(c) $7\frac{1}{2}$ days (d) $8\frac{3}{4}$ days

Q14. A can do a piece of work in 20 days and B in 30 days. They work together for 7 days and then both leave the work. Then C alone finishes the remaining work in 10 days. In how many days will C finish the full work?

(a) 25 days (b) 30 days

(c) 24 days (d) 20 days

Q15. Sunil completes a work in 4 days, whereas Dinesh completes the work in 6 days. Ramesh works $1\frac{1}{2}$ times as fast as Sunil. The three together can complete the work in

(a) $1\frac{5}{12}$ days (b) $1\frac{5}{7}$ days

(c) $1\frac{3}{8}$ days (d) $1\frac{5}{19}$ days

Q16. A farmer can plough a field working 6 hours per day in 18 days. The worker has to work how many hours per day to finish the same work in 12 days?

(a) 7 (b) 9

(c) 11 (d) 13

Q17. Two successive discounts of a% and b% on the marked price of an article are equivalent to the single discount of

(a) (a + b)%
(b) $\left(a + b - \frac{ab}{100}\right)\%$
(c) $\frac{a+b}{100}\%$
(d) $\frac{a+b}{2}\%$

Q18. A tradesman marks his goods 30% more than the cost price. If he allows a discount of $6\frac{1}{4}\%$, then his gain percent is

(a) $23\frac{3}{4}\%$
(b) 22%
(c) $21\frac{7}{8}\%$
(d) 30%

Q19. A shopkeeper purchased a chair marked at Rs 600 at two successive discounts of 15% and 20% respectively. He spent Rs 28 on transportation and sold the chair for Rs 545. His gain percent was

(a) 25%
(b) 30%
(c) 35%
(d) 20%

Q20. The marked price of a piano was Rs 15,000. At the time of sale, there were successive discounts of 20%, 10% and 10% respectively on it. The sale price was

(a) Rs 9,720
(b) Rs 9,750
(c) Rs 9,760
(d) Rs 9,780

Q21. The third proportional of 12 and 18 is

(a) 3
(b) 6
(c) 27
(d) 144

Q22. Ram got twice as many marks in English as in Science. His total marks in English, Science and Maths are 180. If the ratio of his marks in English and Maths is 2 : 3, what are his marks in Science?

(a) 30
(b) 60
(c) 72
(d) 90

Q23. Three numbers are in the ratio 2 : 3 : 4. If the sum of their squares is 1856, then the numbers are

(a) 8, 12 and 16
(b) 16, 24 and 32
(c) 12, 18 and 24
(d) None of the above

Q24. If x runs are scored by A, y runs by B and z runs by C, then x : y = y : z = 3 : 2. If total number of runs scored by A, B and C is 342, the runs scored by each would be respectively

(a) 144, 96, 64
(b) 162, 108, 72
(c) 180, 120, 80
(d) 189, 126, 84

Q25. Rs 900 is divided among A, B, C; the division is such that 1/2 of A's money = $\frac{1}{3}^{rd}$ of B's money = $\frac{1}{4}^{th}$ of C's money. Find the amount (in Rs) received by A, B, C.

(a) 300, 400, 200
(b) 350, 450, 100
(c) 200, 300, 400
(d) 400, 150, 350

Q26. If Rs 126.50 is divided among A, B and C in the ratio of 2 : 5 : 4, the share of B exceeds that of A by

(a) Rs 36.50
(b) Rs 35.50
(c) Rs 34.50
(d) Rs 33.50

Q27. The average of first three numbers is double of the fourth number. If the average of all the four numbers is 12, find the 4th number.

(a) 16
(b) 48/7
(c) 20
(d) 18/7

Q28. If the average of 6 consecutive even numbers is 25, the difference between the largest and the smallest number is

(a) 8
(b) 10
(c) 12
(d) 14

Q29. A train goes from Ballygunge to Sealdah at an average speed of 20 km/hour and comes back at an average speed of 30 km/hour. The average speed of the train for the whole journey is

(a) 27 km/hr
(b) 26 km/hr
(c) 25 km/hr
(d) 24 km/hr

Q30. The arithmetic mean of 100 observations is 24.6 is added to each of the observations and, then each of them is multiplied by 2.5. Find the new arithmetic mean.

(a) 30
(b) 75
(c) 35
(d) 60

Q31. Sachin Tendulkar has a certain average for 11 innings. In the 12th innings he scores 120 runs and thereby increases his average by 5 runs. His new average is

(a) 60
(b) 62
(c) 65
(d) 66

Q32. The average of 11 results is 50. If the average of the first six results is 49 and that of the last six is 52, the sixth result is

(a) 48
(b) 50
(c) 52
(d) 56

Q33. By selling 25 metres of cloth a trader gains the selling price of 5 metres of cloth. The gain of the trader in % is

(a) 25
(b) 20
(c) 28
(d) 29

Q34. A sells a suitcase to B at 10% profit. B sells it to C at 30% profit. If C pays Rs 2,860 for it, then the price at which A bought it is

(a) Rs 1,000 (b) Rs 1,600

(c) Rs 2,000 (d) Rs 2,500

Q35. Gita buys a plot of land for Rs 96,000. She sells 2/5 of it at a loss of 6%. She wants to make a profit of 10% on the whole transaction by selling the remaining land. The gain % on the remaining land is

(a) 20 (b) $20\frac{2}{3}$

(c) 14 (d) 7

Q36. An article is sold at a gain of 15%. Had it been sold for Rs 27 more, the profit would have been 20%. The cost price of the article is

(a) Rs 500 (b) Rs 700

(c) Rs 540 (d) Rs 545

Q37. On selling 17 balls at Rs 720, there is a loss equal to the cost price of 5 balls. The cost price (in Rs.) of a ball is

(a) 45 (b) 50

(c) 55 (d) 60

Q38. Sourav purchased 30 kg of rice at the rate of Rs 10 kg and 35 kg at the rate of Rs 11 per kg. He mixed the two. At what price per kg (in Rs.) should he sell the mixture to make a 30% profit in the transaction?

(a) 12.5 (b) 13

(c) 13.7 (d) 14.25

Q39. A number increased by $22\frac{1}{2}\%$ gives 98. The number is

(a) 45 (b) 18

(c) 80 (d) 81

Q40. Two items A and B are sold at a profit of 10% and 15% respectively. If the amount of profit received is the same, then the cost price of A and B may be

(a) Rs 1,000, Rs 1,500 (b) Rs 5,000 Rs 2,000

(c) Rs 3,000 Rs 2,000 (d) Rs 3,000 Rs 5,000

Q41. In an examination A got 25% marks more than B, B got 10% less than C and C got 25% more than D. If D got 320 marks out of 500, the marks obtained by A were

(a) 405 (b) 450

(c) 360 (d) 400

Q42. Three sets of 40, 50 and 60 students appeared for an examination and the pass percentage was 100, 90 and 80 respectively. The pass percentage of the whole set is

(a) $88\ \frac{2}{3}$ (b) $84\frac{2}{3}$

(c) $88\frac{1}{3}$ (d) $84\frac{1}{3}$

Q43. A certain distance is covered by a cyclist at a certain speed. If a jogger covers half the distance in double the time, the ratio of the speed of the jogger to that of the cyclist is

(a) 1 : 4 (b) 4 : 1

(c) 1 : 2 (d) 2 : 1

Q44. The distance between places A and B is 999 km. An express train leaves place A at 6 am and runs at a speed of 55.5 km/hr. The train stops on the way for 1 hour 20 minutes. It reaches B at

(a) 1:20 am (b) 12 pm

(c) 6 pm (d) 11 pm

Q45. If a boy walks from his house to school at the rate of 4 km per hour, he reaches the school 10 minutes earlier than the scheduled time. However, if he walks at the rate of 3 km per hour, he reaches 10 minutes late. Find the distance of his school from his house.

(a) 5 km (b) 4 km

(c) 6 km (d) 4.5 km

Q46. Two trains are running 40 km/hr and 20 km/hr respectively in the same direction. The fast train completely passes a man sitting in the slow train in 5 seconds. The length of the fast train is

(a) $23\frac{2}{9}$ m (b) 27 m

(c) $27\frac{7}{9}$ m (d) 23 m

Q47. The compound interest on Rs 5,000 for 3 years at 10% p.a. will amount to

(a) Rs 1,654 (b) Rs 1,655

(c) Rs 1,600 (d) Rs 1,565

Q48. What sum will give Rs 244 as the difference between simple interest and compound interest at 10% in $1\frac{1}{2}$ years compounded half yearly?

(a) Rs 40,000 (b) Rs 36,000

(c) Rs 32,000 (d) Rs 28,000

Q49. A sum of Rs 3,200 invested at 10% p.a. compounded quarterly amounts to Rs 3,362. Compute the time period.

(a) 1/2 year (b) 1 year

(c) 2 years (d) 3/4 year

Q50. If a sum of money compounded annually becomes 1.44 times of itself in 2 years, then the rate of interest per annum is

(a) 25%
(b) 22%
(c) 21%
(d) 20%

Q51. A lawn is in the form of a rectangle having its breadth and length in the ratio 3 : 4. The area of the two lawn is 1/12 hectare. The breadth of the lawn is

(a) 25 metres
(b) 50 metres
(c) 75 metres
(d) 100 metres

Q52. A right circular cone is 3.6 cm high and radius of its base is 1.6 cm. It is melted an recast into a right circular cone with radius of its base as 1.2 cm. Then the height of the cone (in cm) is

(a) 3.6
(b) 4.8
(c) 6.4
(d) 7.2

Q53. The area of a rectangle is thrice that of square. The length of the rectangle is 20 cm and the breadth of the rectangle is 3/2 time that of the side of the square. The side of the square, in cm is

(a) 10
(b) 20
(c) 30
(d) 60

Q54. If h, c, v are respectively the height, curved surface area and volume of a right circular cone, then the value of $3\pi vh^3 - c^2h^2 + 9v^2$ is

(a) 2
(b) –1
(c) 1
(d) 0

Q55. The volume of a conical tent is 1232 cu. m and the area of its base is 154 sq. m. Find the length of the canvas required to build the tent, if the canvas is 2m in width. $\left(\text{Take } \pi = \frac{22}{7}\right)$

(a) 270 m
(b) 272 m
(c) 276 m
(d) 275 m

Q56. Assume that a drop of water is spherical and its diameter is one-tenth of a cm. A conical glass has a height equal to the diameter of its rim. If 32,000 drops of water fill the glass completely, then the height of the glass, in cm, is

(a) 1
(b) 2
(c) 3
(d) 4

Q57. The total number of spherical bullets, each of diameter 5 decimeter, that can be made by utilizing the maximum of a rectangular block of lead with 11 metre length. 10 metre breadth and 5 metre width is (assume that $\pi > 3$)

(a) equal to 8800
(b) less than 8800
(c) equal to 840
(d) greater than 9000

Q58. The diagonals of a rhombus are 12 cm and 16 cm respectively. The length of one side is

(a) 8 cm (b) 6 cm

(c) 10 cm (d) 12 cm

Q59. A rectangular block of metal has dimensions 21 cm, 77 cm and 24 cm. The block has been melted into a sphere. The radius of the sphere is $\left(\text{Take } \pi = \frac{22}{7}\right)$

(a) 21 cm (b) 7 cm

(c) 14 cm (d) 28 cm

Q60. If a right circular cone of height 24 cm has a volume of 1232 cm^3, then the area (in cm^2) of curved surface is

(a) 550 (b) 704

(c) 924 (d) 1254

Q61. The diameter of a circular wheel is 7 m. How many revolutions will it make in traveling 22 km?

(a) 100 (b) 400

(c) 500 (d) 1000

Q62. The area of an equilateral triangle is $9\sqrt{3}$ m^2. The length (in m) of the median is

(a) $2\sqrt{3}$ (b) $3\sqrt{3}$

(c) $3\sqrt{2}$ (d) $2\sqrt{2}$

Q63. If each edge of a cube is increased by 50%, the percentage increase in surface area is

(a) 125% (b) 50%

(c) 100% (d) 75%

Q64. How many tiles, each 4 decimeter square, will be required to cover the floor of a room 8 m long and 6 m broad?

(a) 200 (b) 260

(c) 280 (d) 300

Q65. If the surface areas of two spheres are in the ratio 4 : 9, then the ratio of their volumes will be

(a) 4 : 9 (b) 16 : 27

(c) 8 : 27 (d) 16 :9

Q66. If x = y = 333 and z = 334, then the values of $x^3 + y^3 + z^3 - 3xyz$ is

(a) 0 (b) 667

(c) 1000 (d) 2334

Q67. If $\frac{x-a^2}{b+c}+\frac{x-b^2}{c+a}+\frac{x-c^2}{a+b}=4(a+b+c)$. Then x is equal to

(a) $(a+b+c)^2$ (b) $a^2+b^2+c^2$

(c) $ab+bc+ca$ (d) $a^2+b^2+c^2-ab-bc-ca$

Q68. If $(x-a)(x-b)=1$ and $a-b+5=0$, then the value of $(x-a)^3-\frac{1}{(x-a)^3}$ is

(a) –125 (b) 1

(c) 125 (d) 140

Q69. If $\sqrt{x}=\sqrt{3}-\sqrt{5}$, then the value of $x^2-16x+6$ is

(a) 0 (b) –2

(c) 2 (d) 4

Q70. The value of $\sqrt{2\sqrt[3]{4\sqrt{2\sqrt[3]{4\sqrt{2\sqrt[3]{4}\ldots}}}}}$

(a) 2 (b) 2^2

(c) 2^3 (d) 2^5

Q71. The value of $\left\{\frac{3\sqrt{2}}{(\sqrt{3}+\sqrt{6})}-\frac{4\sqrt{3}}{(\sqrt{6}+\sqrt{2})}+\frac{\sqrt{6}}{(\sqrt{2}+\sqrt{3})}\right\}$ is

(a) $\sqrt{2}$ (b) 0

(c) $\sqrt{3}$ (d) $\sqrt{6}$

Q72. If $a^2+b^2+c^2=2(a-b-c)-3$, then the value of $4a-3b+5c$ is

(a) 2 (b) 3

(c) 5 (d) 6

Q73. If $2x+\frac{2}{x}=3$, then the value of $x^3+\frac{1}{x^3}+2$ is

(a) -9/8 (b) -25/8

(c) 7/8 (d) 11

Q74. Out of the given responses, one of the factors of $(a^2-b^2)^3+(b^2-c^2)^3+(c^2-a^2)^3$ is

(a) (a + b)(a – b) (b) (a + b)(a + b)

(c) (a – b)(a – b) (d) (b – c)(b – c)

Q75. If $x=\sqrt[3]{5}+2$, then the value of $x^3-6x^2+12x-13$ is

(a) –1 (b) 1

(c) 2 (d) 0

Q76. A tower standing on a horizontal plane subtends a certain angle at a point 160 m apart from the foot of the tower. On advancing 100 m towards it, the tower is found to subtend an angle twice as before. The height of the tower is

(a) 80 m (b) 100 m

(c) 160 m (d) 200 m

Q77. ∠A, ∠B, ∠C are three angles of a triangle. If ∠A – ∠B = 15°, ∠B – ∠C = 30°, then ∠A, ∠B and ∠C are

(a) 80°, 60°, 40° (b) 70°, 50°, 60°

(c) 80°, 65°, 35° (d) 80°, 55°, 45°

Q78. If ABC is an equilateral triangle and D is a point on BC such that AD⊥BC, then

(a) AB : BD = 1 : 1 (b) AB : BD = 1 : 2

(c) AB : BD = 2 : 1 (d) AB : BD = 3 : 2

Q79. ΔABC is an isosceles triangle and $\overline{AB} = \overline{AC}$ = 2a unit $\overline{BC}$ = a unit. Draw $\overline{AD} \perp \overline{BC}$, and find the length of $\overline{AD}$.

(a) $\sqrt{15}$a unit (b) $\frac{\sqrt{15}}{2}$a unit

(c) $\sqrt{17}$a unit (d) $\frac{\sqrt{17}}{2}$a unit

Q80. All sides of a quadrilateral ABCD touch a circle. If AB = 6 cm, BC = 7.5 cm. CD = 3 cm, then DA is

(a) 3.5 cm (b) 4.5 cm

(c) 2.5 cm (d) 1.5 cm

Q81. In a right-angled triangle, the product of two sides is equal to half of the square of the third side i.e., hypotenuse. One of the acute angles must be

(a) 60° (b) 30°

(c) 45° (d) 15°

Q82. If two concentric circles are of radii 5 cm and 3 cm, then the length of the chord of the larger circle which touches the smaller circle is

(a) 6 cm (b) 7 cm

(c) 10 cm (d) 8 cm

Q83. Inside a square ABCD, ΔBEC is an equilateral triangle. If CE and BD intersect at O, then ∠BOC is equal to

(a) 60° (b) 75°

(c) 90° (d) 120°

Q84. A point D is taken from the side BC of a right-angled triangle ABC, where AB is hypotenuse. Then

(a) $AB^2 + CD^2 = BC^2 + AD^2$ (b) $CD^2 + BD^2 = 2AD^2$

(c) $AB^2 + AC^2 = 2AD^2$ (d) $AB^2 = AD^2 + BD^2$

Q85. Let C be a point on a straight line AB. Circles are drawn with diameters AC and AB. Let P be any point on the circumference of the circle with diameter AB. If AP meets the other circle at Q, then

(a) QC || PB (b) QC is never parallel to PB

(c) QC = $\frac{1}{2}$PB (d) QC || PB and QC = $\frac{1}{2}$PB

Q86. An isosceles triangle ABC is right-angled at B. D is a point inside the triangle ABC. P and Q are the feet of the perpendiculars drawn from D on the sides AB and AC respectively of ΔABC. If AP = a cm AQ = b cm and ∠BAD = 15°, sin 75° =

(a) $\frac{2b}{\sqrt{3}a}$ (b) $\frac{a}{2b}$

(c) $\frac{\sqrt{3}a}{2b}$ (d) $\frac{2a}{\sqrt{3}b}$

Q87. Each interior angle of a regular octagon in radians is

(a) $\frac{\pi}{4}$ (b) $\frac{3\pi}{4}$

(c) $\frac{2\pi}{3}$ (d) $\frac{1}{3}\pi$

Q88. D and E are two points on the sides AC and BC respectively of ΔABC such that DE = 18 cm, CE = 5 cm an ∠DEC = 90°, If tan ∠ABC = 3.6, then AC : CD =

(a) BC : 2 CE (b) 2 CE : BC

(c) 2 BC : CE (d) CE : 2 BC

Q89. D is point on the side BC of a triangle ABC such that AD⊥BC. E is a point on AD for which AE : ED = 5 : 1. If ∠BAD = 30° and tan (∠ACB) = 6 tan (∠DBE), then ∠ACB =

(a) 30° (b) 45°

(c) 60° (d) 15°

Q90. If sin θ + cos θ = $\sqrt{2}$ cos θ, then the value of (cos θ – sin θ) is

(a) $\sqrt{3}$ cos θ (b) $\sqrt{3}$ sin θ

(c) $\sqrt{2}$ cos θ (d) $\sqrt{2}$ sin θ

Q91. If x sin 45° = y cosec 30°, then $\frac{x^4}{y^4}$ is equal to

(a) 4^3 (b) 6^3

(c) 2^3 (d) 8^3

Q92. The angle of elevation of a tower from a distance 50 m from its foot is 30°. The height of the tower is

(a) $50\sqrt{3}$ m
(b) $\frac{50}{\sqrt{3}}$ m
(c) $75\sqrt{3}$ m
(d) $\frac{75}{\sqrt{3}}$ m

Q93. ABCD is a rectangle where the ratio of the lengths of AB and BC is 3 : 2. If P is the mid-point of AB, then the value of sin ∠CPB is

(a) 3/5
(b) 2/5
(c) 3/4
(d) 4/5

Q94. $\frac{\sin A}{1+\cos A} + \frac{\sin A}{1-\cos A}$ **is (0° < A < 90°)**

(a) 2 cosec A
(b) 2 sec A
(c) 2 sin A
(d) 2 cos A

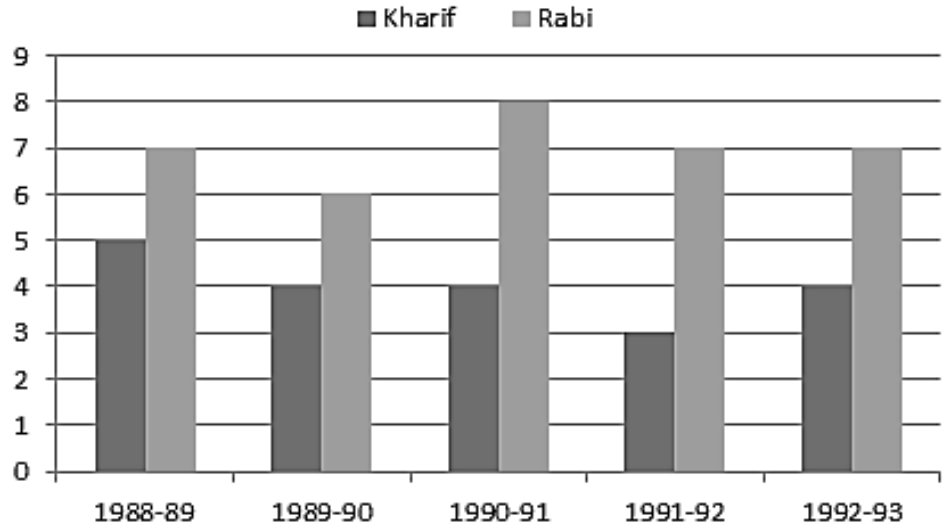
Q95. If r sin θ = 1, r cos θ = $\sqrt{3}$**, then the value of** $(\sqrt{3}\tan\theta + 1)$ **is**

(a) $\sqrt{3}$
(b) $\frac{1}{\sqrt{3}}$
(c) 1
(d) 2

Q96. In a frequency distribution, o gives are graphical representation of

(a) frequency
(b) relative frequency
(c) cumulative frequency
(d) raw data

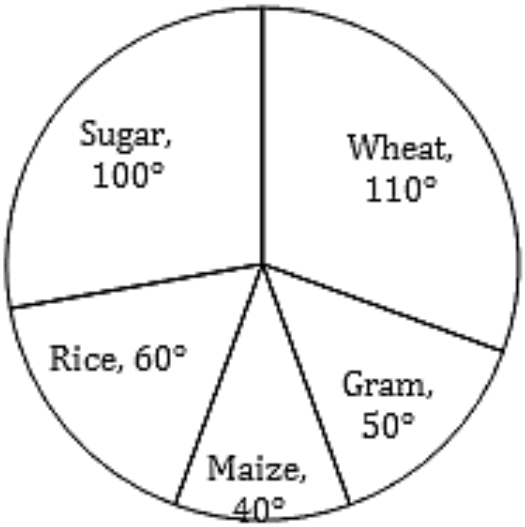
Q97. The average Kharif production of the given years is
Production of pulses in Rabi and Kharif season (in million tonnes)



(a) 4 million tones
(b) 5 million tonnes
(c) 4.5 million tones
(d) 5.5 million tones

Directions (98-98): The annual agricultural production (in tonnes) of an Indian State is given in the pie chart. The total production is 9000 tonnes. Read the pie chart and answer the question no. 98.

(In tones)

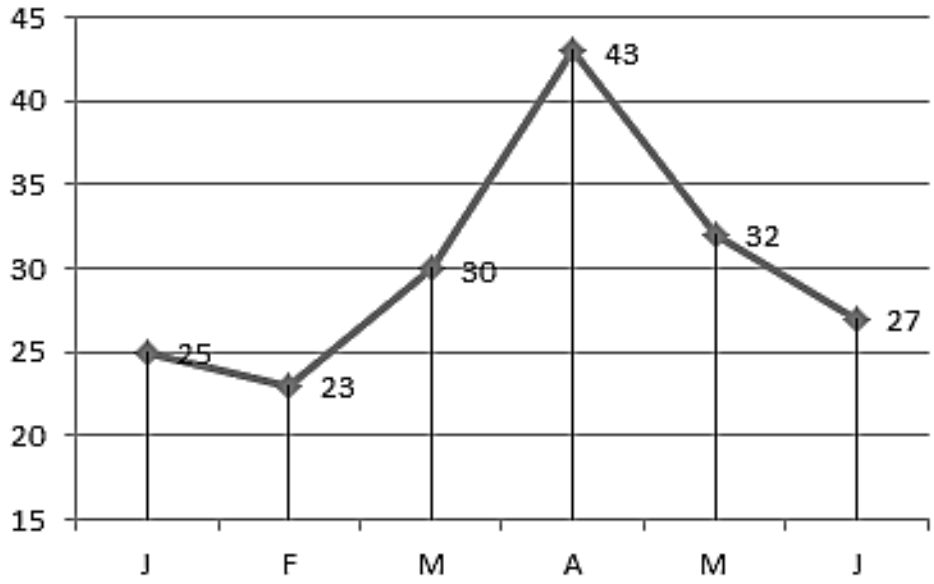


Q98. What is the annual production of wheat?

(a) 2750 tonnes
(b) 3000 tonnes
(c) 3540 tonnes
(d) 3500 tonnes

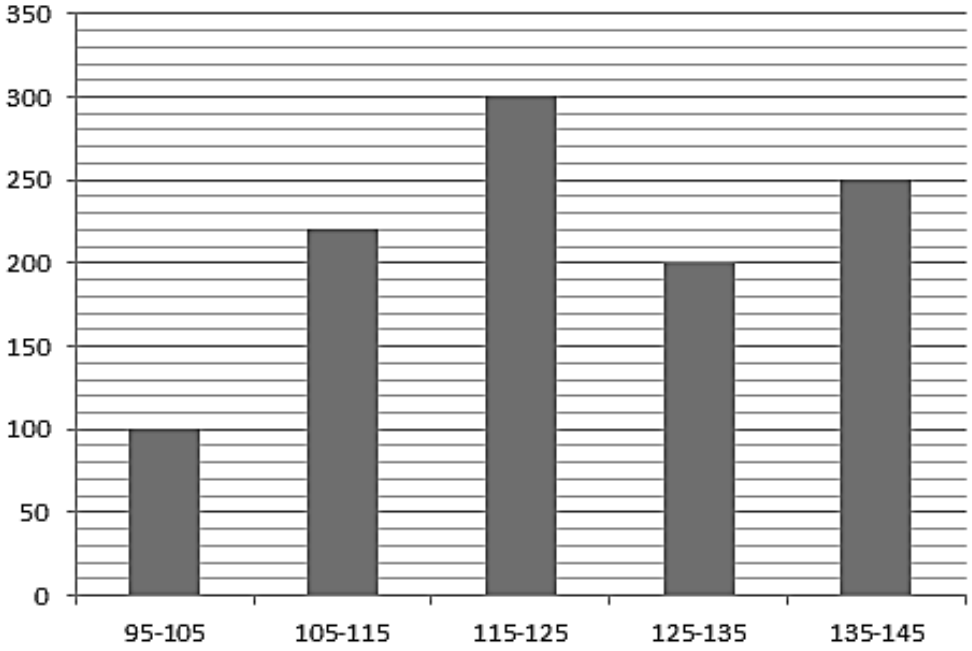
Q99. Given is a line graph showing the number of accidents in a city during the first 6 months of 1999.

The decrease % of accidents from May to June is



(a) $15\frac{3}{8}\%$
(b) $15\frac{1}{8}\%$
(c) $15\frac{5}{8}\%$
(d) $15\frac{7}{8}\%$

Directions (100-100): Study the histogram of weight distribution of different men and answer question no. 100.



Q100. Average number of men per interval who participated in this survey is

(a) 200 (b) 180

(c) 214 (d) 194