

SSC CHSL SUNDAY QUANT (Question)

Q1. If  $3 \sin \theta = 2 \cos^2 \theta$ ,  $0^\circ < \theta < 90^\circ$ , then the value of  $(\tan \theta + \cos \theta + \sin \theta)$  is:

- (a)  $\frac{5\sqrt{3}}{3}$   
 (b)  $\frac{5\sqrt{3}}{6}$   
 (c)  $\frac{3+5\sqrt{3}}{6}$   
 (d)  $\frac{3+5\sqrt{3}}{3}$

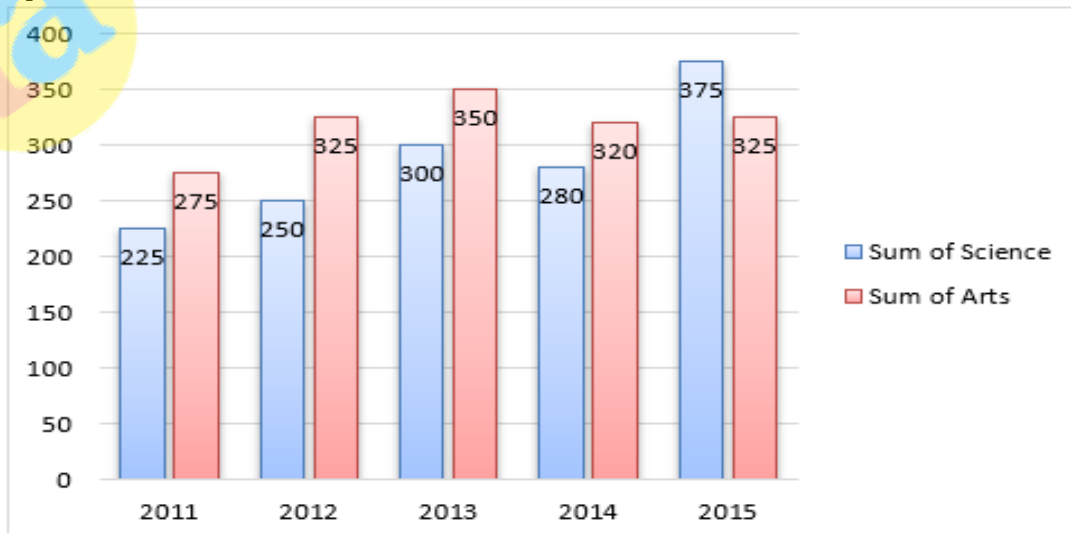
Q2. The ratio of the present ages of A and B is 6:5. Four years ago, this ratio was 5:4. What will be the ratio of the ages of A and B after 12 years from now?

- (a) 3:2  
 (b) 8:7  
 (c) 9:8  
 (d) 7:6

Q3. A, B and C can finish a task in 42 days, 84 days and 28 days, respectively. A started the work. B joined him after 3 days. If C joined them after 5 days from the beginning, then for how many days did A work till the completion of the task?

- (a) 20  
 (b) 15  
 (c) 17  
 (d) 18

Q4. The given Bar graph presents the number of students from Science and Arts streams from a school in different years.



In which year the number of Arts students is 30% more than that of Science?

- (a) 2013
- (b) 2014
- (c) 2012
- (d) 2011

Q5. If  $a+b+c = 4$  and  $ab+bc+ca = 1$ , then the value of  $a^3+b^3+c^3-3abc$  is:

- (a) 50
- (b) 60
- (c) 52
- (d) 47

Q6. Anu spends 90% of her income. If her expenditure increases by 25% and savings increase by 30%, then by what percent does her salary increase?

- (a) 25.5%
- (b) 24%
- (c) 22.5%
- (d) 20%

Q7. Let  $\Delta ABC \sim \Delta QPR$  and  $\frac{ar(\Delta ABC)}{ar(\Delta PQR)} = \frac{9}{16}$ . If  $AB = 12\text{cm}$ ,  $BC = 6\text{cm}$  and  $AC = 9\text{cm}$ , then  $QP$  is equal to:

- (a) 16cm
- (b) 9cm
- (c) 12cm
- (d) 8cm

Q8. A circle is inscribed in a quadrilateral ABCD, touching sides AB, BC CD and DA at P, Q, R and S, respectively. If  $AS = 8\text{cm}$ ,  $BC = 11\text{cm}$ , and  $CR = 5\text{cm}$ , then the length AB is equal to:

- (a) 12 cm
- (b) 13 cm
- (c) 16 cm
- (d) 14 cm

Q9.

If  $3\cos^2 A + 6\sin^2 A = 3$ ,  $0^\circ \leq A \leq 90^\circ$ , then the value of A is:

- (a)  $30^\circ$
- (b)  $0^\circ$
- (c)  $90^\circ$
- (d)  $45^\circ$



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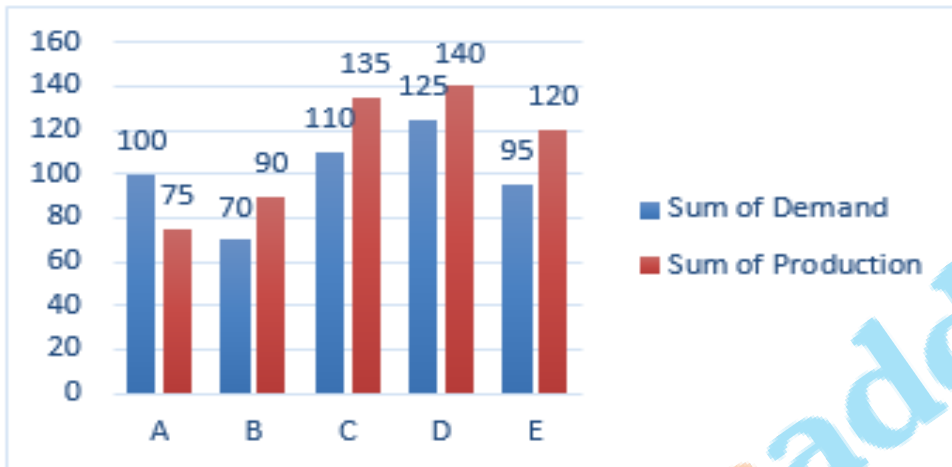
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Q10. In  $\triangle ABC$ ,  $AD \perp BC$  at  $D$  and  $AE$  is the bisector of  $\angle A$ . If  $\angle B=72^\circ$  and  $\angle C=26^\circ$ , then what is the measure of  $\angle DAE$ ?

- (a)  $23^\circ$
- (b)  $25^\circ$
- (c)  $49^\circ$
- (d)  $37^\circ$

Q11. The given Bar Graph presents the Demand and Production of Motorcycles of five companies (in lakhs)



What is the ratio of the total Demand of motorcycles of companies A and D taken together to the Production of motorcycles of company C?

- (a) 13: 9
- (b) 8: 5
- (c) 5: 3
- (d) 9: 7

Q12. A and B, working together, can complete a work in 16day, C and A together can complete it in 32 days, B and C together can compete it in 24 days. They worked together for 12 days. In how many days will C alone complete the remaining work?

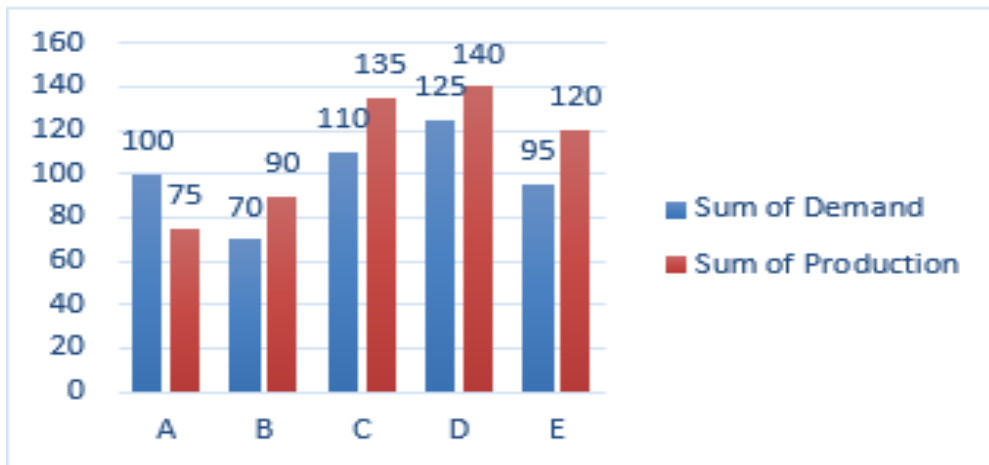
- (a) 40
- (b) 36
- (c) 45
- (d) 32

Q13.

If  $a^3 + b^3 = 110$  and  $a + b = 5$ , then  $(a + b)^2 - 3ab$  is equal to:

- (a) 52
- (b) 32
- (c) 42
- (d) 22

Q14. The given Bar Graph presents the Demand and Production of motorcycles of five companies (in lakhs).



The total Production of motorcycles of companies B and D taken together is what percent of the Demand of motorcycles of all the companies taken together?

- (a) 46%
- (b) 38%
- (c) 48%
- (d) 40%

Q15. The total number of students in class A and B is 96. The number of students in A is 40% more than that in B. the average weight (in kg) of the students in B is 50% more than that of the students in A. If the average weight of all the students in A and B taken together is 58 kg, then what is the average weight of the students in B?

- (a) 72 kg
- (b) 60 kg
- (c) 48 kg
- (d) 66 kg

Q16.

If  $a + b + c = 5$ , and  $a^2 + b^2 + c^2 = 33$ , then what is the value of  $a^3 + b^3 + c^3 - 3abc$ ?

- (a) 195
- (b) 180
- (c) 192
- (d) 185

Q17.

If  $40\sqrt{5}x^3 - 3\sqrt{3}y^3 = (2\sqrt{5}x - \sqrt{3}y) \times (Ax^2 + Bxy + Cy^2)$ , then what is the value of  $\sqrt{B^2 + C^2} - A$ ?

- (a) 11
- (b) 7
- (c) 8
- (d) 9

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**Q18.** What is the compound interest on a sum of Rs.4,096 at 15% p.a. for  $2\frac{1}{2}$  years, if the interest is compounded 10-monthly?

- (a) Rs.1,726
- (b) Rs.1,736
- (c) Rs.1,636
- (d) Rs.1,763

**Q19.** A train x running at 84 km/h crosses another train y running at 52 km/h in opposite direction in 12 seconds. If the length of y is two-third that of x, then what is the length of x?

- (a) 250 m
- (b) 242 m
- (c) 272 m
- (d) 408 m

**Q20.** The given Bar Graph presents the Demand and Production of motorcycles of five companies (in lakhs).



The company in which the Production of motorcycles is approximately 23% more than the Demand is:

- (a) B
- (b) C
- (c) D
- (d) E

**Q21.** If  $x^2 + 1 = 3x$ , then the value of  $\frac{(x^4 + x^{-2})}{(x^2 + 5x + 1)}$  is:

- (a)  $2\frac{1}{3}$
- (b)  $2\frac{1}{4}$
- (c)  $4\frac{1}{2}$
- (d)  $3\frac{1}{2}$

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**Q22.** In an examination, the success to failure ratio was 5: 2. Had the number of failures been 14 more, then the success to failure ratio would have been 9: 5. The total number of candidates who appeared for the examination was:

- (a) 210
- (b) 196
- (c) 126
- (d) 203

**Q23.** In a circle, chords AB and CD intersect each other at E. If CD=18 cm, DE=6 cm and AE = 18 cm, then BE=?

- (a) 6 cm
- (b) 8 cm
- (c) 3 cm
- (d) 4 cm

**Q24.**

In  $\Delta ABC$ ,  $\angle A = 90^\circ$ .

If BL and CM are the medians, then:

- (a)  $4(BL^2 + CM^2) = 3BC^2$
- (b)  $4(BL^2 + CM^2) = 5BC^2$
- (c)  $3(BL^2 + CM^2) = 4BC^2$
- (d)  $5(BL^2 + CM^2) = 4BC^2$

**Q25.** The radius of the base of a cylinder is 7 cm and its curved surface area is  $440 \text{ cm}^2$ . Its volume (in  $\text{cm}^2$ ) will be:

(Take  $\pi = \frac{22}{7}$ )

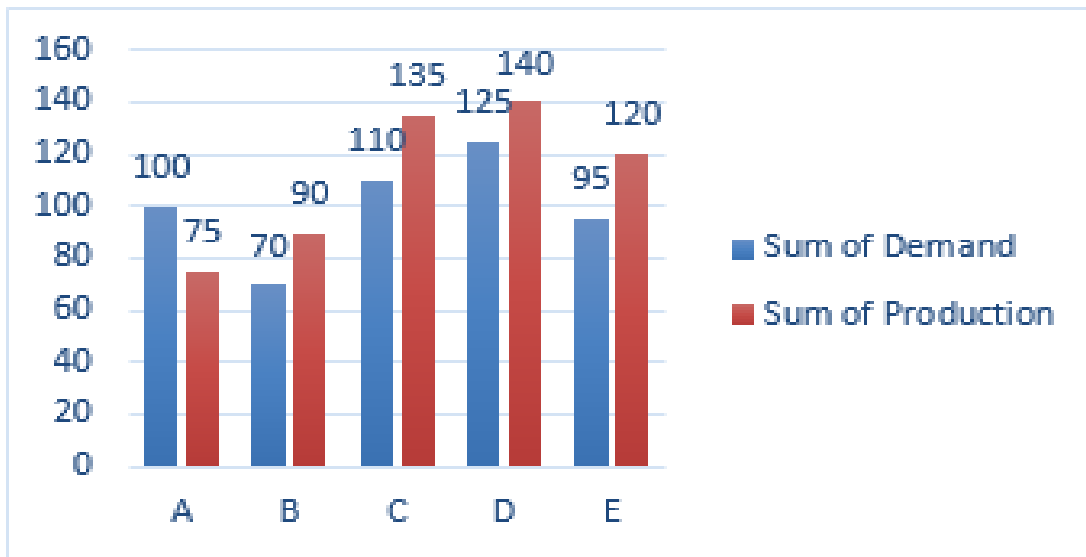
- (a) 1760
- (b) 1430
- (c) 1540
- (d) 1650

**Q26.**

The value of  $\frac{(\cos 9^\circ + \sin 81^\circ)(\sec 9^\circ + \operatorname{cosec} 81^\circ)}{\sin 56^\circ \sec 34^\circ + \cos 25^\circ \operatorname{cosec} 65^\circ}$  is:

- (a)  $1/2$
- (b) 4
- (c) 2
- (d) 1

Q27. The given Bar Graph presents the Demand and Production of motorcycles of five companies (in lakhs).



The average Production of motorcycles of companies B, C and E taken together is what percent less than the demand of motorcycles of D?

- (a) 8%
- (b) 8.7%
- (c) 9.3%
- (d) 6%

Q28.

A simplified value of  $\left(\frac{\sin\theta}{1+\cos\theta} + \frac{1+\cos\theta}{\sin\theta}\right) \left(\frac{1}{\tan\theta+\cot\theta}\right)$  is:

- (a)  $\cos\theta$
- (b)  $2\sin\theta$
- (c)  $\sin\theta$
- (d)  $2\cos\theta$

Q29.

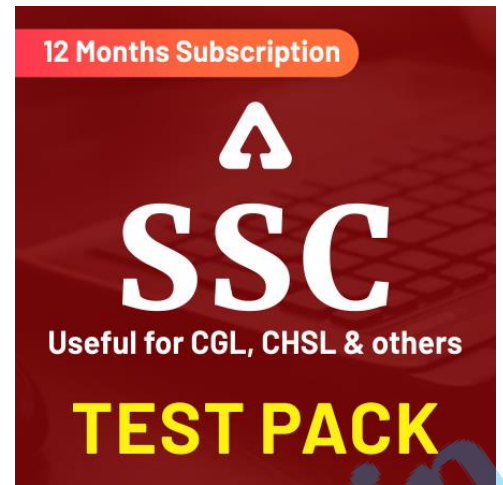
If  $3-2\sin^2\theta - 3\cos\theta = 0, 0^\circ < \theta < 90^\circ$ ,

then what is the value of  $(2\operatorname{cosec}\theta + \tan\theta)$ ?

- (a)  $7\sqrt{3}$
- (b)  $5\sqrt{3}$
- (c)  $\frac{5\sqrt{3}}{3}$
- (d)  $\frac{7\sqrt{3}}{3}$

Q30. Abhi sold two articles for ₹5,220 each. On one, he gained 16% and on the other, he lost 10%. His profit or loss on the whole was:

- (a) Profit, Rs. 140
- (b) Loss, Rs. 125
- (c) Profit, Rs. 180
- (d) Loss, Rs. 130



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