

FOR SBI IBPS PO PRE

2025

12

QUANT CHECKLIST

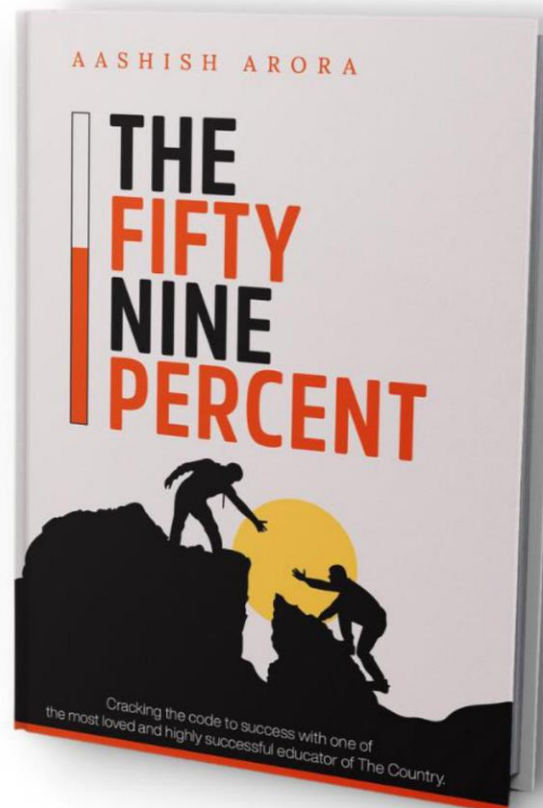
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DEAR STUDENTS

We all dream about the day when we will crack XYZ examination, when will get a five-six-digit big salary, travel to all those beautiful places, buy new spacious house for our parents. Our entire focus is on the success, not the struggle. And it's totally understandable — because success is memorable, and everybody wants it, while the struggle is drab, disagreeable, and unattractive for the general public. But, it is the effort, struggling, and sticking to your resolutions that shapes you as a person. Success is a reward for giving your best, but it's not always within your control whether and when you get to enjoy it. Whenever you find yourself discouraged by your lack of success, remind yourself that it is not giving-up and working hard is your real reward. It's in your hands whether you allow yourself to see the rewards the struggle generates or ignore them, Whether you mindlessly see the end result as the sole indicator of success. I failed numerous times in life. I could have despaired that I had lost so much time and effort and money, but I hadn't really failed. I had been true to my values of pursuing the life I wanted. I kept going, despite the obstacles I constantly encountered along the way. Eventually my efforts paid off. But even if it would have taken longer to get my results — the struggle would still have been worth it for the immense changes I underwent on the journey to pursue my dreams. Eventually my efforts paid off, but even if it had taken longer to get the results — the struggle would still have been worth it for the immense changes I underwent on the journey to pursue my dreams.

Rise and Shine.

Aashish Arora

1. SIMPLIFICATION AND APPROXIMATION

1. $\sqrt{1521} + \sqrt{2304} + (\sqrt{484} \times \sqrt{225}) = 3x + (6)^3$
 - a. 76
 - b. 73
 - c. 70
 - d. 67
 - e. 65
2. $\{(12 \times 126) \div 28\} + (11 \times 46) = x\% \text{ of } 1400$
 - a. 36
 - b. 38
 - c. 40
 - d. 42
 - e. 45
3. $(569 + 891 - 228) \div 14 + 12.5\% \text{ of } 208 = 6x$
 - a. 19
 - b. 20
 - c. 21
 - d. 22
 - e. 18
4. $(96 \text{ of } 45 \div 27)\% \text{ of } 255 + (15)^2 = (197 + 678 - 11x)$
 - a. 23
 - b. 22
 - c. 21
 - d. 20
 - e. 24
5. $\frac{22\% \text{ of } 2400}{x} + (23)^2 = 5157 \div 9$
 - a. 10
 - b. 66
 - c. 20
 - d. 16
 - e. 12
6. $555.55 + 5.55 + 55.55 + 55 = 3x - 15.35$
 - a. 217
 - b. 221
 - c. 225

- d. 229
e. 230
7. $(983 - x) \times 15 = \sqrt{144} \times \sqrt{900}$
a. 949
b. 953
c. 959
d. 963
e. 969
8. $\frac{\sqrt{25^2 + 20\% \text{ of } 125 + 14.28\% \text{ of } 553}}{\sqrt{256} - \sqrt[3]{2197}} = 0.20\% \text{ of } x$
a. 4200
b. 4500
c. 4000
d. 3500
e. 4800
9. $\frac{48\% \text{ of } 250}{15\% \text{ of } x} = 612 \div (1377 \div 9)$
a. 190
b. 230
c. 220
d. 210
e. 200
10. $(24 \times 12.25) + (32 \times 9.75) = 5x + (18 \times 14.50)$
a. 69
b. 70
c. 65
d. 67
e. 68
11. $37.5\% \text{ of } 144 + \sqrt[3]{6859} - \sqrt{1089} = 520 \div x$
a. 13
b. 14
c. 15
d. 16
e. 17
12. $\frac{x}{8} \text{ of } \sqrt{1024} + \frac{x}{7} \text{ of } \sqrt{1764} + \frac{x}{11} \text{ of } \sqrt{3025} = (23)^2 - (22)^2$
a. 8
b. 2
c. 3
d. 4
e. 5
13. $(35 \text{ of } 111 - 2997) \div 12 \text{ of } x = (12.29 + 13.33 + 11.38)$
a. 10
b. 2

- c. 3
d. 4
e. 5
14. $1098 + 1549 + 2698 = 24x + 3713$
a. 56
b. 59
c. 62
d. 65
e. 68
15. $28\frac{4}{7}\% \text{ of } 329 + (11 \times 89) - 25x^2 = 12.5\% \text{ of } 1384$
a. 9
b. 8
c. 7
d. 6
e. 5
16. $(2842 \text{ of } 16 \div 28) \div 14 + 16.66\% \text{ of } 1566 = (16)^2 + (x)^2$
a. 8
b. 9
c. 11
d. 13
e. 15
17. $(1.728)^3 \div (1.44)^2 \times (1.2)^2 = (1.2)^{x-3}$
a. 13
b. 12
c. 11
d. 10
e. 9
18. $66.66\% \text{ of } (285 + 159 + 249) \div 21 = (345 - 176 - x)$
a. 147
b. 157
c. 148
d. 158
e. 137
19. $\frac{240}{25\%} \div \frac{15}{0.50} + 20\% \text{ of } 625 = 9x + (7)^2$
a. 16
b. 15
c. 14
d. 13
e. 12
20. $133.33\% \text{ of } 447 + 112.5\% \text{ of } 280 = 11x - 37.5\% \text{ of } 328$
a. 95
b. 94

- c. 93
- d. 92
- e. 96

SOLUTIONS:-

1. (d)
2. (c)
3. (a)
4. (b)
5. (e)
6. (d)
7. (c)
8. (b)
9. (e)
10. (a)
11. (a)
12. (c)
13. (b)
14. (e)
15. (d)
16. (c)
17. (d)
18. (a)
19. (e)
20. (b)

$$\begin{aligned}
 1) \quad & 39 + 48 + (22 * 15) = 3x + 216 \\
 & 87 + 330 = 3x + 216 \\
 & 417 - 216 = 3x \\
 & \frac{201}{3} = x = 67
 \end{aligned}$$

$$\begin{aligned}
 2) \quad & \frac{1512}{28} + 506 = \frac{x}{100} * 1400 \\
 & 54 + 506 = 14x \\
 & \frac{560}{14} = x = 40
 \end{aligned}$$

$$\begin{aligned}
 3) \quad & \frac{1460-228}{14} + \frac{1}{8} * 208 = 6x \\
 & \frac{1232}{14} + 26 = 6x \\
 & 88 + 26 = 6x \\
 & \frac{114}{6} = x = 19
 \end{aligned}$$

$$\begin{aligned}
 4) \quad & \left(\frac{96*45}{27} \right) \% \text{ of } 255 + 225 = 875 - 11x \\
 & 160\% \text{ of } 255 + 225 = 875 - 11x \\
 & 408 + 225 = 875 - 11x \\
 & 11x = 875 - 633 \\
 & x = \frac{242}{11} = 22
 \end{aligned}$$

$$\begin{aligned}
 5) \quad & \frac{\frac{22}{100} * 2400}{x} + 529 = \frac{5157}{9} \\
 & \frac{528}{x} + 529 = 573 \\
 & \frac{528}{x} = 573 - 529 \\
 & \frac{528}{x} = 44 \\
 & x = \frac{528}{44} = 12
 \end{aligned}$$

$$\begin{aligned}
 6) \quad & 561.1 + 110.55 = 3x - 15.35 \\
 & 671.65 = 3x - 15.35 \\
 & 671.65 + 15.35 = 3x \\
 & \frac{687}{3} = x = 229
 \end{aligned}$$

$$\begin{aligned}
 7) \quad & (983 - x) * 15 = 12 * 30 \\
 & 983 - x = \frac{360}{15} \\
 & 983 - x = 24 \\
 & x = 983 - 24 = 959
 \end{aligned}$$

$$\begin{aligned}
 8) \quad & \frac{\sqrt{625+25+\frac{1}{7}*553}}{16-13} = \frac{20}{100*100} * x \\
 & \frac{\sqrt{650+79}}{3} = \frac{x}{500} \\
 & \frac{27}{3} = \frac{x}{500} \\
 & x = \frac{27*500}{3} = 4500
 \end{aligned}$$

$$\begin{aligned}
 9) \quad & \frac{\frac{48}{100} * 250}{\frac{15}{100} * x} = \frac{612}{\frac{1377}{9}} \\
 & \frac{120}{15x} * 100 = \frac{612}{153}
 \end{aligned}$$

$$\frac{800}{x} = 4$$

$$x = \frac{800}{4} = 200$$

$$10) 294 + 312 = 5x + 261$$

$$606 - 261 = 5x$$

$$\frac{345}{5} = x = 69$$

$$11) \frac{3}{8} * 144 + 19 - 33 = \frac{520}{x}$$

$$54 + 19 - 33 = \frac{520}{x}$$

$$40 = \frac{520}{x}$$

$$x = \frac{520}{40} = 13$$

$$12) \frac{x}{8} * 32 + \frac{x}{7} * 42 + \frac{x}{11} * 55 = 529 - 484$$

$$4x + 6x + 5x = 45$$

$$15x = 45$$

$$x = \frac{45}{15} = 3$$

$$13) \frac{35 * 111 - 2997}{12 * x} = 37$$

$$\frac{3885 - 2997}{12x} = 37$$

$$\frac{888}{12x} = 37$$

$$\frac{74}{x} = 37$$

$$x = \frac{74}{37} = 2$$

$$14) 2647 + 2698 = 24x + 3713$$

$$5345 - 3713 = 24x$$

$$\frac{1632}{24} = x = 68$$

$$15) \frac{2}{7} * 329 + 979 - 25x^2 = \frac{1}{8} * 1384$$

$$94 + 979 - 25x^2 = 173$$

$$1073 - 173 = 25x^2$$

$$\frac{900}{25} = x^2$$

$$36 = x^2 = 6$$

$$16) \frac{2842 * 16}{28} \div 14 + \frac{1}{6} * 1566 = 256 + x^2$$

$$\frac{1624}{14} + 261 = 256 + x^2$$

$$116 + 261 - 256 = x^2$$

$$121 = x^2 = 11$$

$$17) (1.2^3)^3 \div (1.2^2)^2 \times (1.2)^2 = (1.2)^{x-3}$$

$$1.2^9 \div 1.2^4 \times (1.2)^2 = (1.2)^{x-3}$$

$$\frac{(1.2)^9}{(1.2)^4} \times (1.2)^2 = (1.2)^{x-3}$$

$$9 - 4 + 2 = x - 3$$

$$7 + 3 = x = 10$$

$$18) \left(\frac{2}{3} \times 693 \right) \div 21 = 169 - x$$

$$\frac{462}{21} = 169 - x$$

$$22 = 169 - x$$

$$x = 169 - 22 = 147$$

$$19) \frac{240}{\frac{25}{100}} \div \frac{15}{50} \times 100 + \frac{20}{100} \times 625 = 9x + 49$$

$$\frac{240 \times 100}{25} \times \frac{1}{30} + 125 = 9x + 49$$

$$\frac{960}{30} + 125 - 49 = 9x$$

$$32 + 76 = 9x$$

$$\frac{108}{9} = x = 12$$

$$20) \frac{4}{3} \times 447 + \frac{9}{8} \times 280 = 11x - \frac{3}{8} \times 328$$

$$596 + 315 = 11x - 123$$

$$911 + 123 = 11x$$

$$\frac{1034}{11} = x = 94$$

2. ARITHMETIC QUESTIONS

1. If Ajay working with 83.33% of his efficiency then he can complete a work in 72 days. If Aruna is half as efficient as Ajay. Then in how many days both of them complete the work together if Ajay work with his full efficiency?

यदि अजय अपनी 83.33% क्षमता के साथ काम करता है तो वह 72 दिनों में एक काम पूरा कर सकता है। यदि अरुणा अजय की आधी क्षमता के साथ काम करती है तो अजय अपनी पूरी क्षमता के साथ काम करता है तो दोनों मिलकर कितने दिनों में काम पूरा करेंगे?

- a. 45
- b. 42
- c. 40
- d. 35
- e. None of these

2. Dhoni and Kohli together started a business with investment of Rs 28000 and Rs “x” respectively. If after 6 months from start of business, Sachin also joined them with an investment of Rs 36000. After two years of business, Dhoni received 35% of the total profit. Then find the value of “x”?

धोनी और कोहली ने मिलकर क्रमशः 28000 रुपये और “x” रुपये के निवेश के साथ एक व्यवसाय शुरू किया। यदि व्यवसाय शुरू होने के 6 महीने बाद, सचिन भी 36000 रुपये के निवेश के साथ उनके साथ जुड़ गया। व्यवसाय के दो साल बाद, धोनी को कुल लाभ का 35% प्राप्त हुआ। तो “x” का मान ज्ञात करें?

- a. 20000
- b. 25000
- c. 30000
- d. None of these
- e. Can't be determined

3. In an office there are a total number of 1400 employees. The ratio of male to female employees in the office is 4:3 respectively. If $(5x+10)\%$ of male employees and $(4x+8)\%$ of female employees have a laptop. Then find the difference between the number of male employees and female employees who don't have a laptop, if total employees who have a laptop are 576?

एक कार्यालय में कुल 1400 कर्मचारी हैं। कार्यालय में पुरुष और महिला कर्मचारियों का अनुपात क्रमशः 4:3 है। यदि $(5x+10)\%$ पुरुष कर्मचारियों और $(4x+8)\%$ महिला कर्मचारियों के पास लैपटॉप है। यदि लैपटॉप रखने वाले कुल कर्मचारियों की संख्या 576 है, तो पुरुष कर्मचारियों और लैपटॉप न रखने वाली महिला कर्मचारियों की संख्या के बीच अंतर ज्ञात कीजिए।

- a. 68
- b. 64
- c. 60
- d. 56
- e. None of these

4. If a shopkeeper marked up the price of a chair 50% above its cost price. If he decreases the discount percent from 10% to 8%, then the profit would increased by Rs12. Then find how much profit would shopkeeper earn if he gives a discount of 20%?

यदि एक दुकानदार ने एक कुर्सी का मूल्य उसके क्रय मूल्य से 50% अधिक अंकित किया। यदि वह छूट प्रतिशत को 10% से घटाकर 8% कर दे, तो लाभ में 12 रुपये की वृद्धि होगी। यदि दुकानदार 20% की छूट देता है, तो उसे कितना लाभ होगा?

- a. 80
- b. 70
- c. 100
- d. 90
- e. None of these

5. If the total cost price of a book and copy is Rs 1350. If the book was sold at 25% profit while copy is sold at a loss of 20%. If the ratio of the selling price of book to copy is 5:4, then find the selling price of copy?

यदि किसी पुस्तक और कॉपी का कुल क्रय मूल्य 1350 रुपये है। यदि पुस्तक 25% लाभ पर बेची गई जबकि कॉपी 20% हानि पर बेची गई। यदि पुस्तक और कॉपी के विक्रय मूल्य का अनुपात 5:4 है, तो कॉपी का विक्रय मूल्य ज्ञात कीजिए?

- a. 500
- b. 550
- c. 700
- d. 650
- e. None of these

6. If Bhaskar and Bunty together can complete a work in 15 hours, Bunty and Ankur together can complete the same work in 20 hours and Ankur and Bhaskar together can complete the same work in "x" hours. If all of them work together then they can finish the work in 10 hours. Find the value of "x"?

यदि भास्कर और बंटी मिलकर किसी काम को 15 घंटे में पूरा कर सकते हैं, बंटी और अंकुर मिलकर उसी काम को 20 घंटे में पूरा कर सकते हैं और अंकुर और भास्कर मिलकर उसी काम को "x" घंटे में पूरा कर सकते हैं। यदि वे सभी मिलकर काम करें तो वे काम को 10 घंटे में पूरा कर सकते हैं। "x" का मान ज्ञात कीजिए?

- a. 10
 - b. 12
 - c. 13
 - d. 14
 - e. None of these
7. In a business, Vinay and Manjeet invested amounts in the ratio of 4:5 respectively whereas Vinay and Abhishek invested amounts in the ratio of 3:2 respectively. If the difference between profit received by Manjeet and Abhishek is Rs 1575, then what was the share of Vinay in the profit?

एक व्यवसाय में, विनय और मंजीत ने क्रमशः 4:5 के अनुपात में राशि निवेश की जबकि विनय और अभिषेक ने क्रमशः 3:2 के अनुपात में राशि निवेश की। यदि मंजीत और अभिषेक द्वारा प्राप्त लाभ के बीच का अंतर 1575 रुपये है, तो लाभ में विनय का हिस्सा क्या था?

- a. 2250
 - b. 2025
 - c. 2475
 - d. 1800
 - e. None of these
8. If the ratio of the speed of boat in still water to the speed of stream is 15:7 respectively. If the difference between the downstream speed of boat and the speed of stream is 15km/hr, then find the time taken by boat to cover 550km downstream distance?

यदि स्थिर जल में नाव की गति का धारा की गति से अनुपात क्रमशः 15:7 है। यदि नाव की धारा के अनुकूल गति और धारा की गति के बीच का अंतर 15 किमी/घंटा है, तो नाव द्वारा धारा के अनुकूल 550 किमी की दूरी तय करने में लिया गया समय ज्ञात कीजिए।

- a. 25 hour
 - b. 22.5 hour
 - c. 20 hour
 - d. 30 hour
 - e. 28 hour
9. Three business partners Tanmay, Umesh and Virat started a business by investing amounts in the ratio of 4:6:9 respectively. After 6 months from start of business, Virat withdrew some amount such that his investment now become equals to $\frac{1}{2}$ nd of sum of

Tanmay and Umesh initial investment. If at the end of the year, Umesh's share in profit is Rs420, then find the total profit from business after one year?

तीन व्यापारिक साझेदार तन्मय, उमेश और विराट ने क्रमशः 4:6:9 के अनुपात में राशि निवेश करके एक व्यवसाय शुरू किया। व्यवसाय शुरू होने के 6 महीने बाद, विराट ने कुछ राशि इस तरह निकाली कि उसका निवेश अब तन्मय और उमेश के शुरुआती निवेश के योग का $\frac{1}{2}$ th हो गया। यदि वर्ष के अंत में, लाभ में उमेश का हिस्सा 420 रुपये है, तो एक वर्ष के बाद व्यवसाय से कुल लाभ ज्ञात कीजिए?

- a. 1280
- b. 1540
- c. 1190
- d. 1340
- e. None of these

10. Yuvraj spends 15% of his monthly salary on transportation. Out of the remaining, he spends 20% on entertainment. The ratio of his expenses on food and EMI is 6:11 of the remaining salary. If he spends Rs 11,000 on EMI. Then find his monthly salary?

युवराज अपने मासिक वेतन का 15% परिवहन पर खर्च करता है। शेष में से, वह मनोरंजन पर 20% खर्च करता है। भोजन और EMI पर उसके खर्च का अनुपात शेष वेतन का 6:11 है। यदि वह EMI पर 11,000 रुपये खर्च करता है। तो उसका मासिक वेतन ज्ञात कीजिए?

- a. 15000
- b. 18000
- c. 20000
- d. 25000
- e. 30000

11. A shopkeeper mixes two types of sugar P and Q with cost price in the ratio of 11:16 are mixed in the ratio of 2:3 respectively. If the mixture is sold at a loss of 14.28% after giving a discount of 16.66%. What is the cost price of type Q sugar, if the selling price of final mixture is Rs 60/kg?

एक दुकानदार दो प्रकार की चीनी P और Q को 11:16 के लागत मूल्य के साथ क्रमशः 2:3 के अनुपात में मिलाता है। यदि मिश्रण को 16.66% की छूट देने के बाद 14.28% की हानि पर बेचा जाता है। Q प्रकार की चीनी का लागत मूल्य क्या है, यदि अंतिम मिश्रण का विक्रय मूल्य 60 रुपये प्रति किलोग्राम है?

- a. 60
- b. 65
- c. 70
- d. 75
- e. 80

12. A dog started to chase a rabbit and takes 4 jumps for every 7 jumps of rabbit. But 7 jumps of rabbit are equal to 3 jumps of dog. What is the ratio of speeds of Dog and Rabbit?

एक कुत्ता खरगोश का पीछा करना शुरू करता है और खरगोश की हर 7 छलांग के लिए 4 छलांग लगाता है। लेकिन खरगोश की 7 छलांगें कुत्ते की 3 छलांगों के बराबर हैं। कुत्ते और खरगोश की गति का अनुपात क्या है?

- a. 4:5
- b. 4:3
- c. 3:2
- d. 7:9
- e. None of these

13. A juice-seller sells the juice at cost price but he mixes water in it, thus he gains 44.44%. Then find the amount of water mixed by him, if total mixture obtained after mixing water is 52 liters?

एक जूस विक्रेता जूस को लागत मूल्य पर बेचता है लेकिन वह उसमें पानी मिला देता है, जिससे उसे 44.44% का लाभ होता है। यदि पानी मिलाने के बाद प्राप्त कुल मिश्रण 52 लीटर है, तो उसके द्वारा मिलाए गए पानी की मात्रा ज्ञात कीजिए।

- a. Can't be determined
- b. 18
- c. 20
- d. 25
- e. None of these

14. If the ratio of the present ages of Akash and Muskan is 5:3. The sum of ages of Akash and Naman 5 years ago was 71 years and the sum of ages of Muskan and Naman 6 years ago was 51 years. Then find the present age of Akash is how much percent more than the present age of Naman?

यदि आकाश और मुस्कान की वर्तमान आयु का अनुपात 5:3 है। 5 वर्ष पहले आकाश और नमन की आयु का योग 71 वर्ष था और 6 वर्ष पहले मुस्कान और नमन की आयु का योग 51 वर्ष था। तो बताइए आकाश की वर्तमान आयु नमन की वर्तमान आयु से कितने प्रतिशत अधिक है?

- a. 35%
- b. 30%
- c. 25%
- d. 20%
- e. None of these

15. A container is in the form of a cylinder whose radius is 14cm. If the ratio of the curved surface area of the container and total surface area of the container are in the ratio of 15:29. Then find the volume of the container?

एक कंटेनर एक बेलन के आकार का है जिसकी त्रिज्या 14 सेमी है। यदि कंटेनर के वक्र पृष्ठीय क्षेत्रफल और कंटेनर के कुल पृष्ठीय क्षेत्रफल का अनुपात 15:29 है। तो कंटेनर का आयतन ज्ञात कीजिए?

- a. 9240
- b. 8840
- c. 9680
- d. 10480
- e. None of these

16. Usman and Saquib travel from Punjab to Lucknow, a distance of 320km at a speed of 13 km/hr and x km/hr respectively. If Saquib reaches Lucknow first and return immediately and meets Usman at a distance of 60km from Lucknow. Find the value of " x "?

उस्मान और साकिब पंजाब से लखनऊ तक 320 किमी की दूरी क्रमशः 13 किमी/घंटा और x किमी/घंटा की गति से तय करते हैं। यदि साकिब पहले लखनऊ पहुँचता है और तुरंत वापस लौटता है और लखनऊ से 60 किमी की दूरी पर उस्मान से मिलता है। " x " का मान ज्ञात कीजिए?

- a. 23km/hr
- b. 25km/hr
- c. 20km/hr
- d. 19km/hr
- e. None of these

17. Anurag invested Rs " x " in SBI at 10% per annum compounded annually for 2 years and he also invested Rs($x+800$) in Canara Bank at 15% per annum compounded annually for 2 year. If the total amount he received from SBI is Rs 1598 less than the total amount he received from Canara Bank at the end of two year. Then find the value of " x "?

अनुराग ने एसबीआई में 2 वर्षों के लिए 10% वार्षिक चक्रवृद्धि ब्याज पर " x " रुपए निवेश किए और उसने केनरा बैंक में भी 2 वर्षों के लिए 15% वार्षिक चक्रवृद्धि ब्याज पर ($x+800$) रुपए निवेश किए। यदि एसबीआई से उसे प्राप्त कुल राशि दो वर्ष के अंत में केनरा बैंक से प्राप्त कुल राशि से 1598 रुपए कम है। तो " x " का मान ज्ञात कीजिए?

- a. 5600
- b. 4800
- c. 4000
- d. 6400
- e. None of these

18. The side of a square is "x" cm more than the radius of a circle, whose area is 1386 cm^2 . If the circumference of the circle is equal to the perimeter of the square, then find the value of "x"?

एक वर्ग की भुजा एक वृत्त की त्रिज्या से "x" सेमी अधिक है, जिसका क्षेत्रफल 1386 cm^2 है। यदि वृत्त की परिधि वर्ग की परिधि के बराबर है, तो "x" का मान ज्ञात कीजिए?

- a. 12cm
- b. 13cm
- c. 14cm
- d. 10cm
- e. 11cm

19. If the population of city A is 60,000. If the male population in city A increases by 7% while female population in city A decreases by 5%, then population of the city A increases by 2%. Find the difference between the number of male and female population in the city initially?

यदि शहर A की जनसंख्या 60,000 है। यदि शहर A में पुरुष जनसंख्या 7% बढ़ जाती है जबकि शहर A में महिला जनसंख्या 5% कम हो जाती है, तो शहर A की जनसंख्या 2% बढ़ जाती है। शहर में शुरू में पुरुष और महिला जनसंख्या की संख्या के बीच अंतर ज्ञात कीजिए?

- a. None of these
- b. 8000
- c. 15000
- d. 12000
- e. 10000

20. A fruit seller bought some mangoes from wholesaler at the rate of 10 mangoes for Rs 5 and he also bought equal number of mangoes from V-Mart at the rate of 12 mangoes for Rs 8. He then sold his entire stock at 8 mangoes for Rs 7. Find out his gain or loss percentage?

एक फल विक्रेता ने थोक विक्रेता से 5 रुपये में 10 आमों की दर से कुछ आम खरीदे और उसने वी-मार्ट से भी 8 रुपये में 12 आमों की दर से समान संख्या में आम खरीदे। फिर उसने अपना पूरा स्टॉक 7 रुपये में 8 आमों के हिसाब से बेच दिया। उसका लाभ या हानि प्रतिशत ज्ञात कीजिए?

- a. 50%
- b. 30%
- c. 40%
- d. 60%
- e. None of these

SOLUTIONS:-

1. (c)
2. (b)
3. (d)
4. (a)
5. (e)
6. (b)
7. (e)
8. (a)
9. (c)
10. (d)
11. (e)
12. (b)
13. (e)
14. (c)
15. (a)
16. (d)
17. (b)
18. (a)
19. (e)
20. (a)

$$1) 83.33\% = \frac{5}{6}$$

$$I : F$$

$$\text{expenditure} = 6 \quad 5$$

$$\text{time} = 5 \quad 6$$

$$6 \text{ unit} = 72$$

$$1 \text{ unit} = 12$$

Initially time taken by

$$\text{Ajay} = 5 \text{ unit}$$

$$= 5 * 12$$

$$= 60$$

Efficiency of Ajay = 6

$$\text{Efficiency of Aruna} = \frac{1}{2} * 6$$

$$= 3$$

$$\text{Total work} = 60 * 6$$

$$= 360$$

$$\begin{aligned}\text{Time taken by both} &= \frac{360}{6+3} \\ &= \frac{360}{9} = 40\end{aligned}$$

2) Total month Kohli and Dhoni invested=24

$$\begin{aligned}\text{Month Sachin invested} &= 24 - 6 \\ &= 18\end{aligned}$$

D	:	K	:	S
Inv=2800		x		36000
Time=24		24		18

$$= 672000 \quad 24x \quad 648000$$

Dhoni received 35% profit

$$\begin{aligned}\text{Profit of Sachin number} &= \frac{35}{67200} * 648000 \\ &= 33.75\%\end{aligned}$$

$$\begin{aligned}\text{Profit received by kohli} &= 100 - (35 + 33.75) \\ &= 31.25\%\end{aligned}$$

$$\text{Value of } 24x = \frac{67200}{35} * 31.25$$

$$24x = 600000$$

$$x = \frac{600000}{24} = 25000$$

3) Total employees=1400

$$\text{Male} = 4x$$

$$\text{Female} = 3x$$

$$4x + 3x = 1400$$

$$x = 200$$

$$\text{Male} = 800$$

$$\text{Female} = 600$$

$$\text{Male have a laptop} = 800 * (5x + 10)\%$$

$$\text{Male don't have a laptop} = 800 - 800 * (5x + 10)\%$$

$$\text{Female have a laptop} = 600 * (4x + 8)\%$$

$$\text{Female don't have laptop} = 600 - 600 * (4x + 8)\%$$

$$800 * (5x + 10)\% + 600 * (4x + 8)\% = 576$$

By solving, we get $x = 7$

$$\begin{aligned}\text{Male don't have laptops} &= 800 - (800 * 5x + 10\%) \\ &= 440\end{aligned}$$

$$\begin{aligned}\text{Female don't have laptop} &= 600 - (60 * 4x + 18\%) \\ &= 384\end{aligned}$$

$$\text{Difference} = 440 - 384 = 56$$

4) Let CP=100x

$$\text{MP} = 150\% \text{ of } 100x$$

$$=150x$$

SP if discount is 10%=90% of 150x

$$=135x$$

SP if discount is 8%=92% of 150x

$$=138x$$

Profit increased by Rs12

$$138x-135x=12$$

$$X=4$$

MP=150x

$$=150*4$$

$$=600$$

Discount of 20%

SP=80% of 600

$$=\frac{80}{100} * 600$$

$$=480$$

Profit=480-400

CP of article=100x

$$=100*4$$

$$=400$$

5) CP of B+C=1350

Let CP of B=x

CP of C=1350-x

Book sold at profit=25%

Copy sold at loss=20%

$$\frac{x*125\%}{(1350-x)*80\%} = \frac{5}{4}$$

$$25x = 27000 - 20x$$

$$x = 600$$

CP of copy=1350-x

$$=1350-600$$

$$=750$$

SP of copy=80% of 750

$$=600$$

6) Bhaskar + Bunty=15

Bunty + Ankur=20

Bhaskar + Bunty + Ankur=60(LCM of 15,20 and 10)

$$\text{Efficiency of Bhaskar + Bunty} = \frac{60}{15}$$

$$=4$$

$$\text{Efficiency of Bunty + Ankur} = \frac{60}{20}$$

$$=3$$

$$\text{Efficiency of all of them} = \frac{60}{10} = 6$$

$$\text{Efficiency of Ankur} = 6 - 4 = 2$$

$$\text{Efficiency of Bunty} = 3 - 2 = 1$$

$$\text{Efficiency of Bhaskar} = 4 - 1 = 3$$

$$\text{Time taken by Bhaskar and Ankur together} = \frac{60}{3+2} = \frac{60}{5} = 12$$

$$\begin{array}{rcl} 7) & V & : M : A \\ & 4 & 5 \quad) * 3 \\ & 3 & \quad \quad 2) * 4 \end{array}$$

$$P = 12 \quad 15 \quad 8$$

$$15x - 8x = 1575$$

$$7x = 1575$$

$$x = 225$$

$$\begin{aligned} \text{Share of Vinay in profit} &= 12x \\ &= 12 * 225 \\ &= 2700 \end{aligned}$$

$$8) \text{ Let speed of boat} = 15x$$

$$\text{Speed of stream} = 7x$$

$$\begin{aligned} \text{Downstream speed} &= 15x + 7x \\ &= 22x \end{aligned}$$

$$\begin{aligned} \text{Upstream speed} &= 15x - 7x \\ &= 8x \end{aligned}$$

$$22x - 7x = 15$$

$$15x = 15$$

$$x = 1$$

$$\begin{aligned} \text{Downstream speed} &= 22x \\ &= 22 * 1 \\ &= 22 \end{aligned}$$

$$\text{Time taken} = \frac{550}{22} = 25$$

$$9) \quad T : U : V$$

$$I = 4 \quad 6 \quad 9$$

$$T = 6 \quad 6 \quad 6$$

$$\begin{array}{rcl} & 24 & 36 & 54 \end{array}$$

Now after 6 months Virat withdrew

$$\text{Now investment of Virat} = \frac{1}{2} * (4 + 6) \\ = 5$$

$$I = 4 : 6 : 5$$

$$T = 6 : 6 : 6$$

$$P = 24+24 : 36+36 : 54+30$$

$$= 48 : 72 : 84$$

$$= 4 : 6 : 7$$

$$6 \text{ unit} = 420$$

$$1 \text{ unit} = 70$$

$$\text{Total profit} = (4x + 6x + 7x) \\ = 17 * 70 = 1190$$

10) Let yuvraj salary = $100x$

$$\text{Transportation} = 15\% \text{ of } 100x$$

$$= 15x$$

$$\text{Remaining} = 100x - 15x$$

$$= 85x$$

$$20\% \text{ on entertainment} = 20\% \text{ of } 85x$$

$$= 17x$$

$$\text{Remaining} = 85x - 17x$$

$$= 68x$$

$$\text{Expense on food} = \frac{68x}{6+11} * 6$$

$$= 24x$$

$$\text{Expense on EMIs} = 68x - 24x$$

$$= 44x$$

$$44x = 11000$$

$$x = 250$$

$$\text{total salary} = 100x$$

$$= 100 * 250$$

$$= 25000$$

$$11) 14.28\% = \frac{1}{7} \qquad 16.66\% = \frac{1}{6}$$

$$CP : SP : MP$$

$$= 7 : 6 : 5$$

$$= 5 : 6 : 6$$

$$\text{Ratio} = 35 : 30 : 36$$

$$\text{SP of mixture} = 60/\text{kg}$$

$$30 \text{ unit} = 60$$

$$\begin{aligned}
 1 \text{ unit} &= 2 \\
 \text{CP of mixture} &= 35x \\
 &= 35 * 2 \\
 &= 70 \\
 P &: Q \\
 \text{Cost} &= 11x \quad 16x \\
 \text{Quantity} &= 2 \quad 3 \\
 &\text{-----} \\
 &22x \quad 48x \\
 \text{Value of } x &= \frac{22x + 48x}{2 + 3} = 70 \\
 X &= 5 \\
 \text{CP of type Q} &= 16x \\
 &= 16 * 5 \\
 &= 80
 \end{aligned}$$

12) 7 jump of rabbit = 3 jump of dog

$$\begin{aligned}
 \frac{\text{rabbit}}{\text{dog}} &= \frac{3}{7} \\
 &\text{Dog} \quad \text{Rabbit} \\
 \text{Ratio of speed} &= 4 * 7 \quad 3 * 7 \\
 &= 28 \quad 21 \\
 &= 4 \quad 3
 \end{aligned}$$

13) Gains = 44.44%

$$\begin{aligned}
 &= \frac{4}{9} \\
 &\text{means on 9 unit of milk he mixes 4 unit of water} \\
 \text{Milk} &= 9x \\
 \text{Water} &= 4x \\
 9x + 4x &= 52 \\
 X &= 4 \\
 \text{Milk} &= 9x \\
 &= 9 * 4 \\
 &= 36 \\
 \text{Water} &= 4x \\
 &= 4 * 4 \\
 &= 16
 \end{aligned}$$

14) Akash age = 5x

$$\begin{aligned}
 \text{Muskan age} &= 3x \\
 \text{Sum of age of Akash and Naman current} &= 71 + (5 * 2) \\
 &= 81 \\
 \text{Naman age} &= 81 - 5x
 \end{aligned}$$

6 year ago Naman and Muskan age

$$(81 - 5x - 6) + (3x - 6) = 51$$

$$75 - 5x + 3x - 6 = 51$$

$$69 - 51 = 2x$$

$$x = 9$$

Present age of Akash=5x

$$=5*9$$

$$=45$$

Present age of Naman=81-5x

$$=81-5*9$$

$$=81-45$$

$$=36$$

$$\text{Percent} = \frac{45-36}{36} * 100 = 25\%$$

15) Radius=14cm

Curved surface area= $2\pi rh$

Total surface area= $2\pi r(h + r)$

$$\frac{2\pi rh}{2\pi r(h+r)} = \frac{15}{29}$$

$$\frac{h}{h+r} = \frac{15}{29}$$

$$29h = 15 * (h + 14)$$

$$29h = 15h + 210$$

$$h = 15$$

volume of container= $\pi r^2 h$

$$= \frac{22}{7} * 14 * 14 * 15$$

$$= 9240$$

16) Total distance=320

Distance travelled by saquib=320+60

Distance travelled by Usman=320-60

Speed of Usman=13

Speed of Saquib=x

$$\frac{320+60}{x} = \frac{320-60}{13}$$

$$\frac{380}{x} = \frac{260}{13}$$

$$\frac{380}{x} = 20$$

$$x = \frac{380}{20}$$

$$x = 19$$

17) SBI=x

$$\text{Interest for 2 year} = 10 + 10 + \frac{10*10}{100}$$

$$=21\%$$

$$\text{Total amount} = 100 + 21\%$$

$$=121\%$$

$$\text{Canara bank} = x + 800$$

$$\text{Interest for 2 year} = 15 + 15 + \frac{15 \times 15}{100}$$

$$=32.25\%$$

$$\text{Total amount} = 100 + 32.25\%$$

$$=132.25\%$$

$$132.25\% \text{ of } (x + 800) - 121\% \text{ of } x = 1598$$

$$132.25x + 105800 - 121x = 159800$$

$$11.25x = 54000$$

$$x = 4800$$

18) Area of circle = πr^2

$$1386 = \frac{22}{7} * r^2$$

$$r^2 = 441$$

$$r = 21$$

$$\text{Circumference of circle} = 2\pi r$$

$$= 2 * \frac{22}{7} * 21$$

$$=132$$

$$\text{Perimeter of square} = 4a$$

$$4a = 132$$

$$a = 33$$

$$\text{side of square} = 33$$

$$33 = 21 + x$$

$$X = 33 - 21$$

$$X = 12$$

19) Total population is 60000

$$107$$

$$95$$

$$102$$

$$102 - 95$$

$$107 - 102$$

$$\text{Ratio} = 7 : 5$$

$$7x + 5x = 60000$$

$$X = 5000$$

$$\text{Population of Male} = 7x$$

$$= 7 * 5000$$

$$= 35000$$

$$\text{Population of female} = 5x$$

$$=5*5000$$

$$=25000$$

$$\text{Difference}=35000-25000=10000$$

20) Wholesale=10 mangoes → Rs 5

V-Mart=12 mangoes → Rs 8

Let quantity of both need to be equal

Q P

Wholesaler=10*12 → 5*12

V-Mart=12*10 → 8*10

$$\begin{array}{r} \text{-----} \\ 120 \text{ -----} 60 \end{array}$$

$$120 \text{ -----} 80$$

Total cost= 240 → 140

Now he sold 8 mangoes for Rs 7

Quantity need to be same

SP=8 mangoes → 7*30

CP=240 mangoes → 140

SP=240 mangoes → 210

CP=240 mangoes → 140

$$\begin{aligned} \text{Profit percentage} &= \frac{210-140}{140} * 100 \\ &= \frac{70}{140} * 100 = 50\% \end{aligned}$$

3. Quadratic Equations

1. I. $2x^2 - 15x + 27 = 0$
II. $2y^2 - 23y + 21 = 0$
2. I. $10x^2 - 11x - 6 = 0$
II. $20y^2 + 31y + 12 = 0$
3. I. $x^2 - 14\sqrt{4}x + 192 = 0$
II. $y^2 - 13\sqrt{2}y + 60 = 0$
4. I. $x^2 - 6.2x + 8.4 = 0$
II. $10y^2 - 92y + 210 = 0$
5. I. $x^3 + \sqrt{324} = \sqrt{676}$
II. $\frac{19}{\sqrt{y}} + \frac{17}{\sqrt{y}} = 9\sqrt{y}$
6. I. $3x^2 + 13x + 4 = 0$
II. $2y^2 - 15y + 27 = 0$
7. I. $5x^2 + 37x - 24 = 0$
II. $2y^2 + 38y + 176 = 0$
8. I. $x^2 - 7x + 49 = 8x - 5$
II. $4y^2 + 64y + 255 = 0$
9. I. $(x + 14)^2 = 0$
II. $y^2 = 196$
10. I. $x^2 - 42x + 245 = 0$
II. $y^2 + 13y + 26 = 24y - 2$
11. I. $x^2 + 9.5x + 22.5 = 0$

$$\text{II. } y^2 - 21\sqrt{3}y + 324 = 0$$

$$12. \text{I. } 3x^2 - 39x + 126 = 0$$

$$\text{II. } 3y^2 - 22y + 40 = 0$$

$$13. \text{I. } \frac{12}{\sqrt{x}} - \frac{4}{\sqrt{x}} = \sqrt{x}$$

$$\text{II. } 3y^2 = 1189 - 217$$

$$14. \text{I. } (x + 6)^2 = x + 6$$

$$\text{II. } y^2 = \sqrt[3]{4096}$$

$$15. \text{I. } 18x + 16y = 81$$

$$\text{II. } 19x - 14y = 16$$

$$16. \text{I. } 4x^2 + 22x - 42 = 0$$

$$\text{II. } y^2 - 9.5y + 12 = 0$$

$$17. \text{I. } x^2 = 625$$

$$\text{II. } y = \sqrt{784}$$

$$18. \text{I. } 8x^2 - 45x + 63 = 0$$

$$\text{II. } y^2 + 42\sqrt{5}y + 760 = 0$$

$$19. \text{I. } x^2 + 5.3x - 7.8 = 0$$

$$\text{II. } 3y^2 - 31y + 56 = 0$$

$$20. \text{I. } 5x^2 - 12x + 4 = 0$$

$$\text{II. } 5y^2 - 58y + 168 = 0$$

SOLUTIONS:-

- a. $x > y$
- b. $x < y$
- c. $x \geq y$
- d. $x \leq y$
- e. $x = y$ or relation can't be established

1. (e)
2. (a)
3. (b)
4. (d)
5. (b)
6. (b)
7. (c)
8. (a)
9. (d)
10. (c)
11. (b)
12. (a)
13. (e)
14. (b)
15. (a)
16. (d)
17. (b)
18. (a)
19. (b)
20. (b)

- 1) $X=(+3, +4.5)$
 $Y=(+1, +10.5)$
- 2) $X=(+1.5, -0.4)$
 $Y=(-0.75, -0.8)$
- 3) $X=(+12, +16)$
 $Y=(+200, +18)$
- 4) $X=(+2, +4.2)$
 $Y=(+4.2, +5)$
- 5) $X=(+2)$
 $Y=(+4)$
- 6) $X=(-4, -0.3)$
 $Y=(+3, +4.5)$
- 7) $X=(-8, +0.6)$
 $Y=(-8, -11)$
- 8) $X=(+9, +6)$
 $Y=(-7.5, -8.5)$
- 9) $X=(-14)$

$$Y = (+14, -14)$$

$$10) X = (+7, +35)$$

$$Y = (+7, +4)$$

$$11) X = (-5, -4.5)$$

$$Y = (+12\sqrt{3}, +9\sqrt{3})$$

$$12) X = (+6, +7)$$

$$Y = (+4, +3.3)$$

$$13) X = (+8)$$

$$Y = (+18, -18)$$

$$14) X = (-6, -5)$$

$$Y = (+4, -4)$$

$$15) X = (+2.5)$$

$$Y = (+2.25)$$

$$16) X = (-7, +1.5)$$

$$Y = (+1.5 + 8)$$

$$17) X = (+25, -25)$$

$$Y = (+28)$$

$$18) X = (+3, +2.6)$$

$$Y = (-4\sqrt{5}, -38\sqrt{5})$$

$$19) X = (-6.5, +1.2)$$

$$Y = (+8, +2.3)$$

$$20) X = (+2, +0.4)$$

$$Y = (+6, +5.6)$$

4. WRONG NUMBER SERIES

1. 15,10,10,15,30,175
 - a. No Error
 - b. 15
 - c. 10
 - d. 30
 - e. 175
2. 163,118,128,202,357,598
 - a. 118
 - b. 128
 - c. 202
 - d. 357
 - e. 598
3. 319,332,340,348,361,371
 - a. 319
 - b. 332
 - c. 340
 - d. 348
 - e. 361
4. 198,340,666,1242,2142,3438
 - a. 198
 - b. 340
 - c. 666
 - d. 2142
 - e. 3438
5. 193,223,281,397,629,1093
 - a. 193
 - b. 223
 - c. 397
 - d. 629
 - e. 1093
6. 115,119,99,148,67,188
 - a. 115
 - b. 119
 - c. 99
 - d. 148
 - e. 188
7. 72,77.4,84.6,93.8,104.4,117

- a. 72
 - b. 77.4
 - c. 84.6
 - d. 93.8
 - e. 104.4
8. 173,227,337,535,851,1333
- a. 173
 - b. 337
 - c. 535
 - d. 851
 - e. 1333
9. 18,10,12,22,26,63.5
- a. 18
 - b. 10
 - c. 12
 - d. 22
 - e. 26
10. 639,2559,3519,3840,3919,3935
- a. 639
 - b. 2559
 - c. 3519
 - d. 3840
 - e. 3919
11. 182,197,231,288,379,514
- a. 182
 - b. 197
 - c. 231
 - d. 288
 - e. 379
12. 91,179,259,327,381,419
- a. 91
 - b. 179
 - c. 327
 - d. 381
 - e. 419
13. 38,39,42,45,53,69
- a. 38
 - b. 39
 - c. 42
 - d. 53
 - e. 69
14. 2000,1200,660,300,148.5,59.4

- a. 2000
 - b. 1200
 - c. 660
 - d. 300
 - e. 148.5
15. 641,670,707,756,818,888
- a. 641
 - b. 670
 - c. 756
 - d. 818
 - e. 888
16. 42,105,120,360,354,1062
- a. 42
 - b. 105
 - c. 120
 - d. 354
 - e. 1062
17. 19,15,14,6,−40,−60
- a. 19
 - b. 14
 - c. 6
 - d. -40
 - e. -60
18. 373,541,739,970,1234,1531
- a. 373
 - b. 541
 - c. 739
 - d. 1234
 - e. 1531
19. 689,785,883,982,1082,1186
- a. 689
 - b. 785
 - c. 982
 - d. 1082
 - e. 1186
20. −49,19,120,291,529,903
- a. -49
 - b. 19
 - c. 120
 - d. 529
 - e. 903

SOLUTIONS:-

1. (d)
2. (c)
3. (d)
4. (b)
5. (a)
6. (b)
7. (d)
8. (c)
9. (e)
10. (d)
11. (e)
12. (a)
13. (c)
14. (d)
15. (b)
16. (b)
17. (e)
18. (a)
19. (e)
20. (c)

- 1) *1)-5
*2)-10
*3)-15
*4)-20
*5)-25

- 2) Double difference

-45	+10	+76	+153	+241
	+55	+66	+77	+88

- 3) Digit sum

319+(3+1+9)
332+(3+3+2)
340+(3+4+0)
347+(3+4+7)
361+(3+6+1)

- 4) $+12^2, +18^2, +24^2, +30^2, +36^2$
- 5) +29
+58

+116

+232

+464

6) $+3^2, -5^2, +7^2, -9^2, +11^2$

7) Double difference

+5.4

+7.2

+9

+10.8

+12.6

8) $+(4^3 - 10)$

$+(5^3 - 15)$

$+(6^3 - 20)$

$+(7^3 - 25)$

$+(8^3 - 30)$

9) $*0.5)+1$

$\div 1)+2$

$*1.5)+4$

$\div 2) + 8$

$*2.5)+16$

10) +1920

+960

+320

+80

+16

11) Double difference of square

+15

+34

+57

+89

+137

12) $+(15*6)$

$+(16*5)$

$+(17*4)$

$+(18*3)$

$+(19*2)$

13) $+2^0, +2^1, +2^2, +2^3, +2^4$

14) $* 60\%$

$* 55\%$

$* 50\%$

$* 45\%$

$* 40\%$

15) Double difference of digit sum

+28

+38

+49

+62

+70

16) *3

-6

*3

-6

*3

17) -4)*1

-8)*2

-12)*3

-16)*4

-20)*5

18) Double difference

+165

+198

+231

+264

+297

19) Composite number add

+96

+98

+99

+100

+102

20) +(34*2)

+(34*3)

+(34*5)

+(34*7)

+(34*11)

5. MISSING NUMBER SERIES

1. 189,297,420,?,736,944
 - a. 524
 - b. 474
 - c. 594
 - d. 564
 - e. 544
2. ?,32,67,136,275,552
 - a. 13
 - b. 15
 - c. 17
 - d. 19
 - e. 21
3. 495,686,904,1151,?,1740
 - a. 1389
 - b. 1589
 - c. 1529
 - d. 1489
 - e. 1429
4. 153,222,337,?,751,1050
 - a. 408
 - b. 458
 - c. 498
 - d. 558
 - e. 598
5. ?,20,42,130,528,2656
 - a. 19
 - b. 18
 - c. 17
 - d. 16
 - e. 15
6. 160,720,180,?,210,525
 - a. 585
 - b. 450
 - c. 495
 - d. 630
 - e. 540

7. 195,?,317,758,1719,3400
a. 206
b. 196
c. 216
d. 236
e. 256
8. 619,712,?,1031,1295,1654
a. 863
b. 853
c. 843
d. 833
e. 823
9. 214,248,301,373,464,?
a. 518
b. 514
c. 534
d. 554
e. 574
10. 615,747,915,1123,?,1675
a. 1375
b. 1325
c. 1275
d. 1245
e. 1425
11. 289,433,689,?,1665,2449
a. 1265
b. 1130
c. 1173
d. 1089
e. 1050
12. 1983,2026,2124,2332,2705,?
a. 3108
b. 3128
c. 3248
d. 3288
e. 3298
13. ?,157,172,189,207,227
a. 143
b. 153
c. 146
d. 139
e. 133
14. 192,210.5,?,258.6,288.2,321.5

- a. 239.6
 - b. 238.8
 - c. 232.7
 - d. 230.9
 - e. 227.3
15. 252,126,84,?,60,270
- a. 252
 - b. 210
 - c. 168
 - d. 336
 - e. 294
16. 1800,900,600,450,360,?
- a. 270
 - b. 240
 - c. 180
 - d. 330
 - e. 300
17. 183,124,185,?,189,116
- a. 117
 - b. 118
 - c. 119
 - d. 120
 - e. 121
18. 12,8,12,24,56,?
- a. 155
 - b. 94
 - c. 150
 - d. 152
 - e. 122
19. 193,?,526,970,1858,3634
- a. 292
 - b. 296
 - c. 300
 - d. 304
 - e. 308
20. -96, -65.75, -23.5, ?, 105, 195.25
- a. 2.25
 - b. 10.75
 - c. 16.50
 - d. 28.25
 - e. 32.75

SOLUTIONS:-

1. (d)
2. (b)
3. (e)
4. (c)
5. (a)
6. (d)
7. (b)
8. (c)
9. (e)
10. (a)
11. (d)
12. (e)
13. (a)
14. (c)
15. (b)
16. (e)
17. (b)
18. (c)
19. (d)
20. (e)

1) Double difference

+108

+123

+144

+172

+208

2) $*2)+2$

$*2)+3$

$*2)+2$

$*2)+3$

$*2)+2$

3) $+(14^2 - 5)$

$+(15^2 - 7)$

$+(16^2 - 9)$

$+(17^2 - 11)$

$+(18^2 - 13)$

4) $+(23*3)$

- $+(23*5)$
- $+(23*7)$
- $+(23*11)$
- $+(23*13)$
- 5) $*1)+1$
 - $*2)+2$
 - $*3)+4$
 - $*4)+8$
 - $*5)+16$
- 6) $*4.5$
 - $/4$
 - $*3.5$
 - $/3$
 - $*2.5$
- 7) $+1^2, +11^2, +21^2, +31^2, +41^2$
- 8) Double difference
 - $+93$
 - $+131$
 - $+188$
 - $+264$
 - $+359$
- 9) Double difference
 - $+34$
 - $+53$
 - $+72$
 - $+91$
 - $+110$
- 10) $+(11*12)$
 - $+(12*14)$
 - $+(13*16)$
 - $+(14*18)$
 - $+(15*20)$
- 11) $+12^2, +16^2, +20^2, +24^2, +28^2$
- 12) Double difference
 - $+43$
 - $+98$
 - $+208$
 - $+373$
 - $+593$
- 13) Last two digit add
 - $143+14$
 - $157+15$

$$172+17$$

$$189+18$$

$$207+20$$

14) Double difference

$$+18.5$$

$$+22.2$$

$$+25.9$$

$$+29.6$$

$$+33.3$$

15) $\times 0.5$

$$/1.5$$

$$\times 2.5$$

$$/3.5$$

$$\times 4.5$$

16) $\times 1/2$

$$\times 2/3$$

$$\times 3/4$$

$$\times 4/5$$

$$\times 5/6$$

17) Prime number add

$$-59$$

$$+61$$

$$-67$$

$$+71$$

$$-73$$

18) $\times 0.5)+2$

$$\times 1)+4$$

$$\times 1.5)+6$$

$$\times 2)+8$$

$$\times 2.5)+10$$

19) $+111$

$$+222$$

$$+444$$

$$+888$$

$$+1776$$

20) Double difference

$$+30.25$$

$$+42.25$$

$$+56.25$$

$$+72.25$$

$$+90.25$$

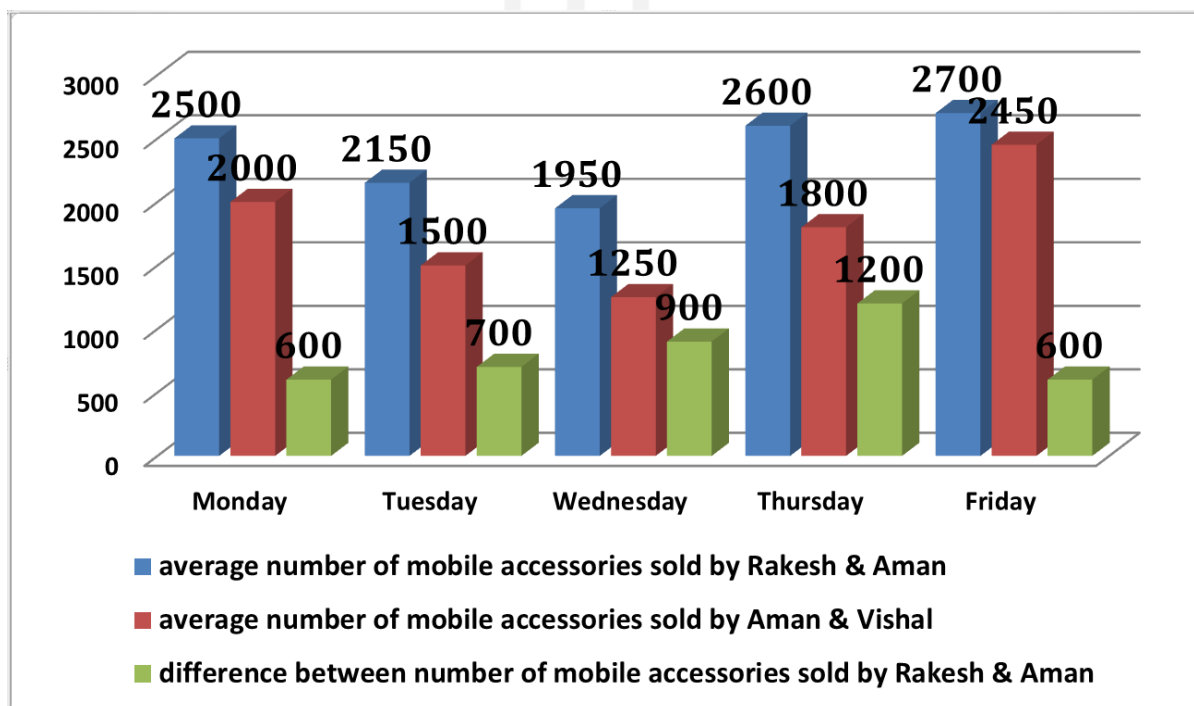
6. DATA INTERPRETATION

SET 1. The data about the number of mobile accessories sold by three shopkeepers over five distinct days is displayed in the bar graph. Read the data and answer the following questions.

Note : The number of mobile accessories sold by Rakesh is more than the number of mobile accessories sold by Aman on each day.

पांच अलग-अलग दिनों में तीन दुकानदारों द्वारा बेचे गए मोबाइल एक्सेसरीज़ की संख्या के बारे में डेटा बार ग्राफ में प्रदर्शित किया गया है। डेटा पढ़ें और निम्नलिखित प्रश्नों के उत्तर दें।

नोट: राकेश द्वारा बेचे गए मोबाइल एक्सेसरीज़ की संख्या प्रत्येक दिन अमन द्वारा बेचे जाने वाले मोबाइल एक्सेसरीज़ की संख्या से अधिक है।



- Determine the number of accessories sold by Vishal on Saturday if 33.33% and 37.5% of the accessories sold by Aman and Rakesh on Wednesday are 350 and 450 less than the accessories sold by Aman and Rakesh on Saturday, and if the total number of accessories sold by all three shopkeepers on Saturday is 18.18% less than the total number of accessories sold by all three shopkeepers on Tuesday.

शनिवार को विशाल द्वारा बेचे गए सामानों की संख्या निर्धारित करें यदि बुधवार को अमन और राकेश द्वारा बेचे गए सामानों में से 33.33% और 37.5% शनिवार को अमन और राकेश द्वारा बेचे गए सामान की तुलना में 350 और 450 कम हैं, और यदि शनिवार को तीनों दुकानदारों द्वारा बेचे गए सामानों की कुल संख्या मंगलवार को सभी तीन दुकानदारों द्वारा बेचे गए सामान की कुल संख्या से 18.18% कम है।

- (a) 1250
- (b) 1800
- (c) 1900
- (d) 2300
- (e) None of these

2. The number of accessories which are sold by Vishal on Monday is what percent of the number of accessories which are sold by Vishal on Tuesday?

विशाल द्वारा सोमवार को बेचे जाने वाले सामान की संख्या मंगलवार को विशाल द्वारा बेचे जाने वाले सामान की संख्या का कितना प्रतिशत है?

- (a) 150%
- (b) 120%
- (c) 100%
- (d) 90%
- (e) None of these

3. How much more or less is the total number of Xiaomi accessories sold by Rakesh and Aman on Monday than the total number of accessories sold by Aman and Vishal on Thursday if 57.12%, 45.45%, and 25% of the accessories sold by Rakesh, Aman, and Vishal on Monday are Samsung and the remaining accessories are Xiaomi?

सोमवार को राकेश और अमन द्वारा बेचे गए Xiaomi सामान की कुल संख्या गुरुवार को अमन और विशाल द्वारा बेचे गए सामान की कुल संख्या की तुलना में कितनी अधिक या कम है यदि सोमवार को राकेश, अमन और विशाल द्वारा बेचे गए सामान का 57.12%, 45.45% और 25% सैमसंग हैं और शेष सामान Xiaomi हैं?

- (a) 1200 less
- (b) 1500 more
- (c) 1800 less
- (d) 1300 more
- (e) None of these

4. Determine the ratio between the total number of accessories sold by all three shopkeepers on Sunday and the total number of accessories sold by all three shopkeepers on Wednesday. If the ratio of the number of accessories sold by Rakesh on Monday to Sunday is 7:5 and the number of accessories sold by Aman and Vishal on Sunday is 12.5% more and 20% more than that of Friday.
रविवार को सभी तीन दुकानदारों द्वारा बेचे गए सामानों की कुल संख्या और बुधवार को सभी तीन दुकानदारों द्वारा बेचे गए सामान की कुल संख्या के बीच अनुपात निर्धारित करें यदि सोमवार से रविवार को राकेश द्वारा बेचे गए सामान की संख्या का अनुपात 7:5 है और रविवार को अमन और विशाल द्वारा बेचे गए सामान की संख्या शुक्रवार की तुलना में 12.5% अधिक और 20% अधिक है।
(a) 13:8
(b) 14: 9
(c) 11:7
(d) 15:8
(e) None of these
5. Find the average number of accessories sold by Rakesh on Tuesday, Wednesday, Thursday and Friday.
मंगलवार, बुधवार, गुरुवार और शुक्रवार को राकेश द्वारा बेचे जाने वाले सामानों की औसत संख्या का पता लगाएं।
(a) 5440
(b) 3260
(c) 2550
(d) 2775
(e) None of these

Solutions

From the graph we can see that

for Monday - average number of mobile accessories sold by Rakesh & Aman = 2500 so sum of number of mobile accessories sold by Rakesh & Aman = 5000 and also it's given that number of mobile accessories sold by Rakesh is more than the number of mobile accessories sold by Aman on each day so difference between number of mobile accessories sold by Rakesh & Aman = 600 so by adding & divide by 2, we get number of mobile

accessories sold by Rakesh = $(5000+600)/2 = 2800$ & number of mobile accessories sold by Aman = $5000-2800 = 2200$.

Also given that average number of mobile accessories sold by Aman & Vishal = 2000 so sum of number of mobile accessories sold by Aman & Vishal = 4000 so number of mobile accessories sold by Vishal = $4000-2200 = 1800$. Similarly we can calculate for all days.

	number of mobile accessories sold by Rakesh	number of mobile accessories sold by Aman	number of mobile accessories sold by Vishal	Total
Monday	2800	2200	1800	6800
Tuesday	2500	1800	1200	5500
Wednesday	2400	1500	1000	4900
Thursday	3200	2000	1600	6800
Friday	3000	2400	2500	7900
	13900	9900	8100	31900

- (d) 2300 {33.33% & 37.5% of the number of accessories which are sold by Aman and Rakesh on Wednesday is 350 less and 450 less than the number of accessories which are sold by Aman and Rakesh on Saturday i.e. 33.33% of the number of accessories which are sold by Aman = $1/3$ of 1500 = 500 & number of accessories which are sold by Rakesh = $3/8$ of 2400 = 900 and then number of accessories which are sold by Aman on Saturday = $500+350 = 850$ & number of accessories which are sold by Rakesh on Saturday = $900+450 = 1350$ and the total number of accessories sold by all three shopkeepers on Saturday is 18.18% less than the total number of accessories sold by all three shopkeepers on Tuesday so total number of accessories sold by all three shopkeepers on Saturday = $9/11$ of 5500 = 4500. So number of accessories which are sold by Vishal on Saturday = $4500 - (850+1350) = 2300$ }
- (a) 150%
- (a) 1200 less {57.12%, 45.45% & 25% of the number of accessories which are sold by Rakesh, Aman & Vishal on Monday is of the Samsung & rest are of the Xiaomi so number of Xiaomi accessories which are sold by Rakesh = $3/7$ of 2800 = 1200 & number of Xiaomi accessories which are sold by Aman = $6/11$ of 2200 = 1200. Sum = $1200+1200 = 2400$. Required answer = $2400-3600 = 1200$ less}
- (c) 11:7 { the ratio of the number of accessories sold by Rakesh on Monday to Sunday is 7:5 so number of accessories sold by Rakesh on Sunday = $5/7$ of 2800 =

2000 and the number of accessories sold by Aman and Vishal on Sunday is 12.5% more and 20% more than that of Friday, so number of accessories sold by Aman on Sunday = $\frac{9}{8}$ of 2400 = 2700 & number of accessories sold by Vishal on Sunday = $\frac{6}{5}$ of 2500 = 3000. Total = 2000+2700+3000 = 7700. Required answer = 7700 : 4900 = 11 : 7}

5. (d) 2775

CHECKLIST

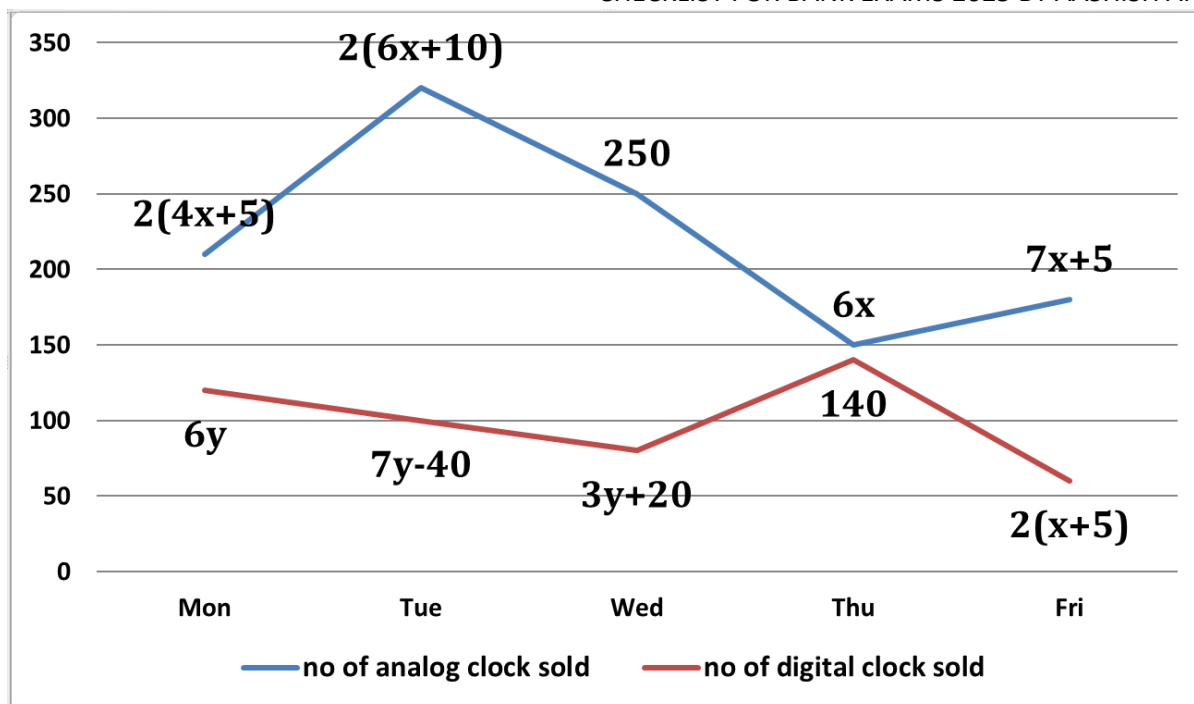
SET 2. The line chart shows the number of two types of watches sold on five different days by shop A. Read the data and answer the following questions.

Note : The average of the number of analog clock sold on Monday, Tuesday & Wednesday is 260 and the number of digital clock sold on Monday is 42.84% less than the number of analog clock sold on Monday.

लाइन चार्ट दुकान ए द्वारा पांच अलग-अलग दिनों में बेची जाने वाली दो प्रकार की घड़ियों की संख्या को दर्शाता है। डेटा पढ़ें और निम्नलिखित प्रश्नों के उत्तर दें।

नोट: सोमवार, मंगलवार और बुधवार को बेची गई एनालॉग घड़ी की संख्या का औसत 260 है और सोमवार को बेची गई डिजिटल घड़ी की संख्या सोमवार को बेची गई एनालॉग घड़ी की संख्या से 42.84% कम है।

ARORA



1. The number of analog clocks manufactured on Thursday is 60 less than the number of digital clocks manufactured on Thursday. The ratio of analog clocks sold to unsold on Thursday is 5:3. What percentage of the digital clocks manufactured on Thursday are unsold?

गुरुवार को निर्मित एनालॉग घड़ियों की संख्या गुरुवार को निर्मित डिजिटल घड़ियों की संख्या से 60 कम है। गुरुवार को बेचे गए एनालॉग घड़ियों का अनुपात 5:3 है। गुरुवार को निर्मित डिजिटल घड़ियों का कितना प्रतिशत बेचा नहीं गया है?

- (a) 72.22%
- (b) 66.66%
- (c) 53.33%
- (d) 42.84%
- (e) None of these

2. Find the ratio between the total number of watches sold on Monday and the total number of watches sold on Friday.

सोमवार को बेची गई घड़ियों की कुल संख्या और शुक्रवार को बेची गई घड़ियों की कुल संख्या के बीच का अनुपात ज्ञात करें।

- (a) 12:5
- (b) 11:8
- (c) 10:7

- (d) 11:6
- (e) None of these

3. The total number of watches sold on Saturday is $\frac{13}{8}$ of the total number of watches sold on Friday. The number of analog clocks sold on Saturday is 16.66% more than the number of digital clocks. By how much is the number of digital clocks sold on Saturday greater or less than the number of digital clocks sold on Monday?
शनिवार को बेची गई घड़ियों की कुल संख्या शुक्रवार को बेची गई घड़ियों की कुल संख्या का $\frac{13}{8}$ है। शनिवार को बेची गई एनालॉग घड़ियों की संख्या डिजिटल घड़ियों की संख्या से 16.66% अधिक है। शनिवार को बेची गई डिजिटल घड़ियों की संख्या सोमवार को बेची गई डिजिटल घड़ियों की संख्या से कितनी अधिक या कम है?

- (a) 50 less
- (b) 75 more
- (c) 40 less
- (d) 60 more
- (e) None of these

4. Determine the difference between the number of digital clocks sold by shop B on Tuesday and the number of digital clocks sold by shop A on Tuesday if the average number of analogue clocks sold by shops A and B on Tuesday is 380 and the number of digital clocks sold by shop B on Tuesday is 18.18% less than the number of analogue clocks sold by shop B on Tuesday.

मंगलवार को दुकान बी द्वारा बेची गई डिजिटल घड़ियों की संख्या और मंगलवार को दुकान ए द्वारा बेची गई डिजिटल घड़ियों की संख्या के बीच अंतर निर्धारित करें यदि मंगलवार को दुकानों ए और बी द्वारा बेची गई एनालॉग घड़ियों की औसत संख्या 380 है और मंगलवार को दुकान बी द्वारा बेची गई डिजिटल घड़ियों की संख्या मंगलवार को दुकान बी द्वारा बेची गई एनालॉग घड़ियों की संख्या से 18.18% कम है।

- (a) 260
- (b) 280
- (c) 200
- (d) 275
- (e) None of these

5. Find the average number of analog clock sold by shop A on Tuesday, Wednesday and Thursday.

मंगलवार, बुधवार और गुरुवार को दुकान A द्वारा बेची गई एनालॉग घड़ियों की औसत संख्या का पता लगाएं।

- (a) 240
- (b) 360
- (c) 450
- (d) 375
- (e) None of these

CHECKLIST

Solutions

It's given that average of the number of analog clock sold on Monday, Tuesday & Wednesday is 260 i.e. $2(4x+5) + 2(6x+10) + 250 = 260 \times 3$ & $8x+10+12x+20+250 = 780$ & $20x+280 = 780$ & $x = 25$.

Also it's given that number of digital clock sold on Monday is 42.84% less than the number of analog clock sold on Monday so number of digital clock sold on Monday = $\frac{4}{7}$ of 210 = 120 so we can say that $6y = 120$ & $y = 20$. So by putting the values of x & y we get,

	no of analog clock sold	no of digital clock sold	Total
Mon	210	120	330
Tue	320	100	420
Wed	250	80	330
Thu	150	140	290
Fri	180	60	240
	1110	500	1610

- (c) 53.33% (the ratio of the number of analog clock sold to unsold on Thursday is 5:3 so number of analog clock unsold on Thursday = $\frac{3}{5}$ of 150 = 90. So total manufactured analog clock on Thursday = $150+90 = 240$ and number of analog clock manufactured on Thursday is 60 less than that of digital clock manufactured on Thursday so number of digital clock manufactured on Thursday = $240+60 = 300$

so number of digital clock unsold on Thursday = $300 - 140 = 160$. Required answer = $160/300 * 100 = 53.33\%$

2. (b) 11:8
3. (d) 60 more {the total number of watches sold on Saturday is $13/8$ of the total number of watches sold on Friday so total number of watches sold on Saturday = $13/8$ of 240 = 390 and the number of analog clock sold on Saturday is 16.66% more than that of digital clock so number of digital clock sold on Saturday = $6/13$ of 390 = 180. Required answer = $180-120 = 60$ more}
4. (a) 260 {average number of analog clock sold by shop A & shop B on Tuesday is 380 so number of analog clock sold by shop B on Tuesday = $760-320 = 440$ and the number of digital clock sold on Tuesday by shop B is 18.18% less than the number of analog clock sold on Tuesday by shop B so the number of digital clock sold on Tuesday by shop B = $9/11$ of 440 = 360. Required answer = $360-100 = 260$ }
5. (a) 240

SET-3

Directions : Study the following passage carefully and answer the questions given below.

The information provided relates to how many laptops of three distinct companies were sold by shopkeepers A and B. Together, the two shopkeepers sold 3500 laptops, out of which Lenovo laptops are 40% of the total. In comparison to shopkeeper B, shopkeeper A sold 200 more Lenovo laptops, and shopkeeper A sold 10 more HP laptops than Dell laptops. The number of Lenovo laptop sold by shopkeeper B is 420 more than the half of the number of Dell laptop sold by B. Shopkeepers A and B sell Dell laptops at a ratio of 16:9.

यह जानकारी तीन अलग-अलग कंपनियों के कितने लैपटॉप दुकानदार A और B ने बेचे, से संबंधित है। दोनों दुकानदारों ने मिलकर कुल 3500 लैपटॉप बेचे, जिनमें से लेनोवो लैपटॉप कुल का 40% हैं। दुकानदार B की तुलना में, दुकानदार A ने 200 अधिक लेनोवो लैपटॉप बेचे, और दुकानदार A ने HP लैपटॉप डेल लैपटॉप से 10 अधिक बेचे। दुकानदार B द्वारा बेचे गए लेनोवो लैपटॉप, B द्वारा बेचे गए डेल लैपटॉप की संख्या के आधे से 420 अधिक हैं। दुकानदार A और B डेल लैपटॉप को 16:9 के अनुपात में बेचते हैं।

1. The number of Hp laptop sold by shopkeeper A is what percent more or less than the number of Hp laptop sold by shopkeeper B?

दुकानदार A द्वारा बेचे गए Hp laptop की संख्या दुकानदार B द्वारा बेचे गए Hp laptop की संख्या से कितने प्रतिशत अधिक या कम है?

- (A) 32.22% more
- (B) 44.44% more
- (C) 62.5% less
- (D) 75% less
- (E) None of these

2. Find the difference between number of Dell laptop sold by shopkeeper A and number of Lenovo laptop sold by shopkeeper B.

दुकानदार A द्वारा बेचे गए Dell laptop की संख्या और दुकानदार B द्वारा बेचे गए Lenovo laptop की संख्या के बीच अंतर ज्ञात कीजिए।

- (A) 20
- (B) 50
- (C) 40
- (D) 10
- (E) None of these

3. Find the ratio between number of Dell laptop sold by shopkeeper A and number of Hp laptop sold by shopkeeper B.

दुकानदार A द्वारा बेचे गए Dell laptop की संख्या और दुकानदार B द्वारा बेचे गए Hp laptop की संख्या के बीच अनुपात ज्ञात कीजिए।

- (A) 77 : 51
- (B) 35 : 33
- (C) 52 : 31
- (D) 64 : 45
- (E) None of these

4. The number of Dell laptop sold by shopkeeper A is what percent of total number of Dell laptop sold by both the shopkeepers?

दुकानदार A द्वारा बेचे गए Dell laptop की संख्या दोनों दुकानदारों द्वारा बेचे गए Dell laptop की कुल संख्या का कितना प्रतिशत है?

- (A) 66%
- (B) 52%
- (C) 64%

(D)47%

(E)None of these

5. The number of Lenovo laptop sold by shopkeeper A is how much more or less than number of Dell laptop sold by shopkeeper B?

दुकानदार A द्वारा बेचे गए Lenovo laptop की संख्या दुकानदार B द्वारा बेचे गए मोबाइलों की कुल संख्या से कितनी अधिक या कम है?

(A)810 more

(B)600 less

(C)440 more

(D)750 less

(E)None of these

Solutions

Shopkeeper	no. of Lenovo laptop sold	no. of Hp laptop sold	no. of Dell laptop sold	Total
A	800	650	640	2090
B	600	450	360	1410
	1400	1100	1000	3500

1. (B)44.44% more
2. (C)40
3. (D)64 : 45
4. (C)64%
5. (C)440 more

CHECKLIST

BY

AASHISH

ARORA