

1. A and B started business with Rs 600 and Rs 500 respectively. After 4 months, C replaces B with X% of B's capital. After 1 year C's share out of the total profit 24000 is 5600. Find the value of X.
(a) 60 (b) 70 (c) 75 (d) 66 (e) 65

2. A train is 216 m long. It crosses a platform in 19 seconds with speed 21 m/s. If some 21 m long boxes are added in train and it crosses same platform, then it takes 26 seconds to cross the platform at same speed. How many boxes were added to the train?
(a) 7 (b) 10 (c) 12 (d) 5 (e) 8

3. A can complete a work in 36 days. B is 33.33% more efficient than A. In how many days both complete the work if they work on alternate days starting with A?
(a) 26 (b) 30 (c) 28 (d) 31 (e) None of these

4. Rakesh adds 12% of his salary in PPF. 3/8th of the remaining amount is spent on clothes and the difference between PPF and clothes expenses is Rs 10500. Remaining amount is spent on house rent and other expenses. If house rent expenses is Rs 1500 less than other expenses, then what is the house rent expenses?
(a) 12000 (b) 10000 (c) 13000 (d) 11000 (e) None

Directions: In each of the following series, one number does not follow a specific pattern. Find that number.

5. 200, 196, 192, 180, 160, 130, 88
(a) 180 (b) 196 (c) 200 (d) 88 (e) 160

6. 9.2, 10.6, 7.6, 12.4, 6, 14, 4.4
(a) 10.6 (b) 14 (c) 4.4 (d) 7.6 (e) 12.4

7. 1, 730, 975, 1054, 1081, 1090, 1093
(a) 730 (b) 975 (c) 1090 (d) 1093 (e) 1054

8. 3, 4, 9, 28, 113, 565, 3397
(a) 9 (b) 3397 (c) 565 (d) 4 (e) 28

9. 4, 6, 12, 30, 60, 315, 1260
(a) 12 (b) 1260 (c) 60 (d) 30 (e) 315

10. In bag A there are 5 red balls, X green balls and 7 yellow balls. Probability of drawing one green ball from bag A is 2/5. In bag B there are (X-3) red balls, (X-4) green balls and 6 yellow balls. 2 balls are drawn from bag B. Find the probability that both the balls are red colour?
(a) 2/23 (b) 3/21 (c) 4/21 (d) 2/21 (e) None of these

11. Sum of present ages of A and B is 41. Age of A 2 year hence is equal to age of C, 1 year ago. Age of A, 4 year hence is equal to age of B 1 year ago and ratio of present age of A and D is 3 : 4. Find the difference of age of C and D.
(a) 3 (b) 5 (c) 6 (d) 4 (e) 8

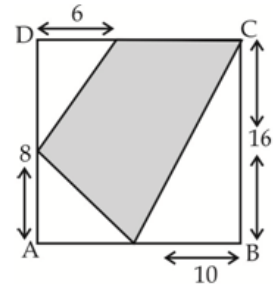
12. Radius of a cylinder is equal to the side of an equilateral triangle having area $16\sqrt{3}$ cm² and height of the cylinder is equal to the perimeter of the triangle. Then find the volume of cylinder. in cm³
(a) 1536π (b) 1518π (c) 1620π (d) 1460π (e) None

13. A man invested Rs. 8000 in a scheme giving 20% p.a. compound interest for two year. The interest received from this scheme is 400% more than the interest on some other amount from another scheme giving 8% S.I. for 4 year. Find the total amount invested in both schemes.
(a) 11200 (b) 10200 (c) 12200 (d) 10400 (e) 10600

14. In one litre of mixture of alcohol and water, 30% is water. The amount of alcohol that must be added to the mixture, so that the part of water in the mixture becomes 15%, is (in ml):
(a) 1000 ml (b) 700 ml (c) 300 ml (d) 900 ml (e) None of these

15. The surface area of a spherical part of a hemispherical bowl with a flat circular detachable cover, the area of the cover is 616 sq cm. What is the volume of the bowl? (approx. cm³)
(a) 9839 (b) 5750 (c) 11450 (d) 19150 (e) None of these

16. Find the area of the shaded region in the given figure of square ABCD:
(a) 112 (b) 128 (c) 140 (d) 156 (e) 106



Directions: The following questions are accompanied by three statements (A) or (I), (B) or (II), and (C) or (III). You have to determine which statement(s) is/are sufficient / necessary to answer the questions.

17. The ratio of the ages of Javed and Akhtar is 6 : 11. Find out the ratio of their ages 5 years ago.

- A. The difference of their ages is 25 years.
 - B. The difference of their ages after 5 years will be 25 years.
 - C. The sum of their ages is 85 years.
- (a) Only A and C together are sufficient
(b) Anyone of A, B and C is sufficient
(c) Only A and B together are sufficient
(d) Any two of A, B and C are sufficient
(e) All together are necessary

18. What is the cost of painting the two adjacent walls of a rectangular hall which has no windows or doors?

- I. The area of the base of hall is 24 sqmetres.
 - II. The breadth, length and the height of the hall are in the ratio of 4 : 6 : 5.
 - III. Area of largest wall is 30 square metres.
- (a) Only I (b) Only II (c) Only III (d) Either I or III and II (e) Data inadequate

19. 8 men and 6 women can complete a piece of work in 21 days. How many days will it take for 12 men and 9 women to complete the same work?

- A. 6 men can complete the work in 42 days.
 - B. 7 women can complete the work in 63 days.
 - C. The amount of work done by a woman is four-sevenths of the work done by a man in one day.
- (a) Any two of them (b) Any of them (c) Only C
(d) Either A or B only (e) No need of any information

20. A train crosses another train in 10 sec. Find out the lengths of the trains.

- A. Ratio between the lengths of second and first train is 4:5.
 - B. Ratio between the speed of first and second trains is 1:2.
 - C. The speed of first train is 36 km/hr.
- (a) Only A and B together (b) Only B and C together
(c) Only A and C together (d) Questions can't be answered even after using all the information
(e) None of these

In the following questions two equations numbered I and II are given. You have to solve both the equations and Given answer:

- (a) if $x > y$ (b) if $x \geq y$ (c) if $x < y$ (d) if $x \leq y$
(e) $x = y$ or the relationship cannot be established

21.

X. An amount of Rs. 6200 fetches simple interest of Rs. 1736

in two years. What is the rate of interest per cent per annum
 Y. An amount of Rs. 4500 fetches compound interest of Rs. 1348.2 in two years. What is the rate of interest per cent per annum

22.

X. Nigam got 42 marks in English which were half the marks he got in Biology. How many marks did Nigam get in Biology
 Y. Nigam's marks in Biology were 14% of the total marks 200 he got in all the subjects together. How many marks did Nigam get in Biology

23.

X. The boat travels at the speed of 4 km/h upstream and the boat travels at the speed of 6 km/h downstream. What is the speed of the boat in still water.

Y. The boat travels at the speed of 6 km/h upstream and the boat travels at the speed of 8 km/h downstream. What is the speed of the boat in still water.

24. If n, p and w are common between X and Y.

X. n is six more than w. What is the exact average of n, 35, 39, 45, p and w.

Y. w is four less than p. What is the exact average of n, 35, 39, 42, p and w.

25.

X. The ratio between the selling price and the cost price of the articles is 5 : 3 respectively. What was the per cent profit/loss made/incurred by selling an article for Rs. 24000.

Y. The difference between the cost price and the selling price is Rs. 9600. What was the per cent profit/loss made/incurred by selling an article for Rs. 24000.

Verbal Reasoning – Strong/ Weak Argument

1. Listening to classical music while you study helps you study better. You should listen to Mozart while studying for your chemistry final.

Which of the following would most strengthen the argument?

- A) Mozart was a well-known amateur chemist who can help students crack the exam
- B) It is very difficult to study the history of classical music.
- C) Scientific studies have confirmed that listening to classical music increases your concentration.
- D) Classical music is sleep inducing so listen before sleeping
- E) AR Raman is also a good musician

2. Dietician: A kiwi contains twice as much vitamin C as an orange does. Nevertheless, those seeking to get their daily dose of Vitamin C from fruits do not need to replace oranges with kiwis in their diet.

Which of the following, if true, would lend the most support to the dietician's conclusion?

- A. Oranges also contain several other vitamins that are beneficial to human health.
- B. In certain regions, kiwis might be harder to obtain than oranges.
- C. Unlike that derived from oranges, Vitamin C from kiwis is easier for a human body to process.
- D. An orange contains a necessary daily dose of Vitamin C.
- E. Neither a kiwi nor an orange provides a sufficient daily dose of vitamin C.

3. Every fall Crows migrate south. The crows always join flocks of migrating Parrots with which they share the same summer and winter territories. If a crow separates from the Parrots it is accompanying, it wanders until it comes across another flock of Parrots. Clearly, therefore, Crows lack the navigational ability to find their way south on their own.

Which of the following, if true, most strengthens the argument?

- A. Crows lay their eggs in the nests of Parrots which breed upon completing their southern migration.
- B. The three species most closely related to Parrots do not migrate at all.
- C. In the spring, Crows migrate north in the company of Sparrows.
- D. Species other than Crows occasionally accompany flocks of migrating Parrots.
- E. In the spring, Parrots migrate north before Crows do.

4. Excavation of the ancient city of Kourion on the island of Cyprus revealed a pattern of debris and collapsed buildings typical of towns devastated by earthquakes. Archaeologists have hypothesized that the destruction was due to a major earthquake known to have occurred near the island in A.D.365.

Which of the following, if true, most strongly supports the archaeologists' hypothesis?

- A. Bronze ceremonial drinking vessels that are often found in graves dating from years preceding and following A.D.365 were also found in several graves near Kourion.
- B. No coins minted after A.D.365 were found in Kourion, but coins minted before that year were found in abundance.
- C. Cyprus is known for earthquakes even today.
- D. Several small statues carved in styles current in Cyprus in the century between A.D.300 and 400 were found in Kourion.
- E. Stone inscriptions in a form of the Greek alphabet that was definitely used in Cyprus after A.D.365 were found in Kourion

Replacement

↑	*	\$	N	?	N	#	B	⊂
\$	N	⊂	↑	?	B	⊂	#	?
A	B	C	D	E				

⊂	↑	#	N	#	N	#	N	#	N
N	#	⊂	B	*	B	⊂	↑	⊂	⊗
1	2	3	4	5					

1.

C	?	?	+	?	=	N	Δ	⊂
L	D	?	L	?	☆	+	N	☆
?	▽	▽	=	?	Δ	B	B	⊗
A	B	C	D	E				

▽	⊗	▽	☆	=	☆	▽	L	Δ	☆
+	?	+	?	?	+	+	?	?	+
=	Δ	=	Δ	Δ	⊗		Δ	=	▽
1	2	3	4	5					

2.

=	X	O	↓	?	X	↑	+	Y
↑	S	S	X	?	↑	N	N	↓
A	B	C	D	E				

S	N	Z	N	Z	N	S	N	S	N
X	↓	X	↑	X	↓	X	↑	X	↑
1	2	3	4	5					

3.

1. (b); (A's profit) : (B's profit) : (c's profit)
 $600 \times 12 : 500 \times 4 : 5 \times 8 \Rightarrow 180 : 50 : x$
 \therefore C's profit = $x / (230 + x) \times 24000 = 5600$
 $30x = 1610 + 7x \Rightarrow x = 70\%$

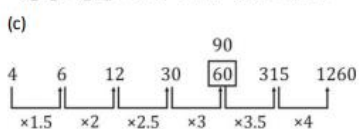
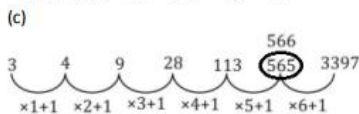
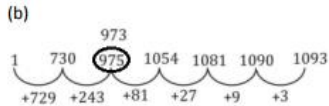
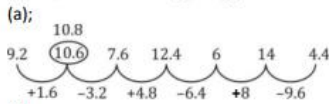
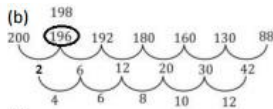
2. (a); Length of platform = $21 \times 19 - 216 = 183$ m
 Let n boxes are added
 $216 + 183 + 21n = 21 \times 26 \Rightarrow 21n = 147 \Rightarrow n = 7$

3. (d); B will complete the work alone in
 $= \frac{3}{4} \times 36 = 27$ days
 A 36 3
 10
 B 27 4

Let total units of work = 108
 No. of units done by A in 1 day = 3
 No. of units done by B in 1 day = 4
 Total work done in 2 days = 7 units
 Work done in 30 days = $7 \times 15 = 105$ units
 Remaining work will be done by A in
 $108 - 105 / 3 = 1$ day. \therefore Total days taken = 31 days

4. (c); 12% of the salary is added as PPF.
 Remaining Part = $100 - 12 = 88\%$
 Amount spent on clothes = $\frac{3}{8}$ of $88\% = 33\%$
 Difference between PPF and cloth expenses = $33 - 12 = 21\%$
 of salary = 10500. Total salary = 50000
 Other expenses = House Rent expenses + 1500
 House Rent expenses + Other expenses = $(100 - 33 - 12)\%$ of salary = 55% of salary = 27500
 House Rent expenses + House Rent expenses + 1500 = 27500
 $2 \times$ House Rent expenses = $27500 - 1500 = 26000$
 House Rent expenses = 13000

5 to 9



10. (d); Probability of drawing one green ball =
 $x / 12 + x = 2/5 \Rightarrow 8$. \therefore Required probability = $5 \times 4 / 15 \times 14 = 2/21$

11. (a); $A + B = 41 \dots(i)$
 $C - 1 = A + 2$
 $C = A + 3$
 And
 $A + 4 = B - 1$
 $\Rightarrow B = A + 5 \dots(ii)$
 From (i) + (ii)
 $A = 18$ years
 $B = 18 + 5 = 23$ years
 $C = 18 + 3 = 21$ years

$A/D = 3/4 \Rightarrow D = 3/4 \times 18 = 24$ years
 \therefore Required difference = $24 - 21 = 3$ years

12. (a); Radius of cylinder = side of equilateral Δ
 $\sqrt{3}/4 a^2 = 16\sqrt{3}$, where a is side of triangle
 $\Rightarrow a^2 = 64 \Rightarrow a = 8$ cm
 And, height of cylinder = $3 \times 8 = 24$ cm
 Volume of cylinder = $\pi r^2 h = \pi \times 8^2 \times 24 = 1536 \pi$ cm³

13. (b); Compound interest earned in 2 years
 $= 8000 \times 1.2 \times 1.2 = 3520$.
 Let amount invested in another scheme is Rs. P.
 $3520 = 500\%$ of $P \times 8 \times 4 / 100 \Rightarrow p = 2200$
 Total investment = $8000 + 2200 = 10,200$

14. (a); In 1000 ml of mixture,
 Alcohol = 700 ml, Water = 300 ml. Let x ml of alcohol is mixed.
 According to question
 $300 / (1000 + x) \times 100 = 15$
 $1000 + x = 2000 \Rightarrow x = 1000$ ml

15. (e); $\pi r^2 = 616$
 $r^2 = 616 \times 7/22 \Rightarrow r^2 = 196 \Rightarrow r = 14$.
 \therefore Volume = $\frac{2}{3} \pi r^3$
 $= \frac{2}{3} \times 22/7 \times 14 \times 14 \times 14 = 915$ cm³

16. Required area of shaded region = $(16)^2 - \{1/2 \times 6 \times 8 + 1/2 \times 8 \times 8 + 1/2 \times 16 \times 10\} = 256 - 128 = 128$ cms

17. (b)
 A) $11x - 6x = 25$. So we can find out ratio of their age 5 year ago.
 B) $(11x + 5) - (6x + 5) = 25$
 C) $11x + 6x = 85$

18. (e); Cost price per unit is not given.

19. (e); $8M + 6W = 1/21$
 $1.5(8M + 6W) = 1/21 \times 1.5$
 $12M + 9W = 1/14$
 Work will be completed in 14 days. No information is required.

20. (d); Question can't be answered because direction of movement of the trains are not given.

21. (a) From statement X =
 $1736 = (6200 \times 2 \times R) / 100 \Rightarrow R = 14\%$
 From statement Y
 $4500 + 1348.2 = 4500[1 + R/100]^2$
 $[1 + R/100]^2 \Rightarrow R \approx 13\%$. Hence $X > Y$.

22. (a) From statement X Marks in Biology = $42 \times 2 = 84$
 From Y Marks in Bio = 14% of 200 = 28. Therefore $X > Y$

23. From statement X
 $x - a = 4$ km/h, $x + a = 6$ km/h $\Rightarrow \therefore x = 5$ km/h
 From Y
 $y - a = 6$ km/h, $y + a = 8$ km/h $\Rightarrow \therefore y = 7$ km/h
 Therefore $X < Y$

24. From statement X & X irrespective of values the average will be same and all values are same but 45 is more than 42 so $X > Y$

25. (a) SP = 24000
 From statement X \Rightarrow $SP/CP = 5/3 \Rightarrow CP = 144,00$
 \therefore % profit = $(24000 - 14400) / 14000 \times 100 = 68.5\%$
 From statement Y \Rightarrow It is not clear that CP is greater than or less than SP. Therefore relationship Cannot be determined