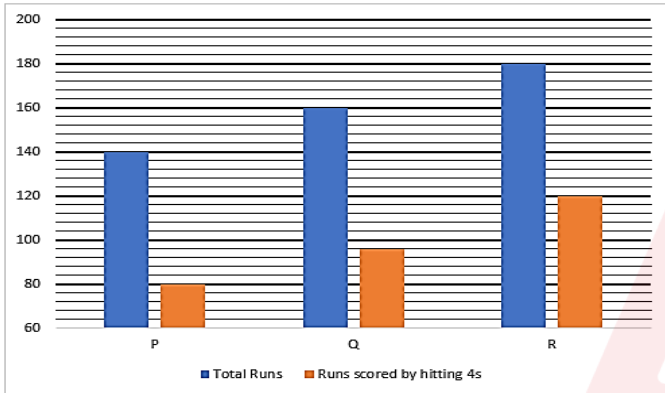


Directions (1-5): The bar graph given below shows total runs scored and total run scored by 4's by three batsmen (P, Q and R). Read the following bar graph carefully and answer the questions given below.



Q1. If another batsman S, scored same number of sixes scored by P and same number of 4s scored by Q, then find the total runs scored by him.

- (a) 108
- (b) 106
- (c) 118
- (d) can't be determined

Q2. Find the number of runs scored by batsman R by running between the wickets, if the number of 6s hit by him is 2.

- (a) 36
- (b) 48
- (c) 34
- (d) 24

Q3. Find the average number of 4s hit by batsmen Q and R.

- (a) 27
- (b) 24
- (c) 22
- (d) 18

Q4. What could be the maximum number of sixes hit by batsman P?

- (a) 8
- (b) 10
- (c) 4
- (d) 3

Q5. If Q scored 34 runs by running between the wickets, then find the percentage of runs scored by him by hitting 6s.

- (a) 17.25%
- (b) 15.75%
- (c) 18.75%
- (d) 18.25%

Q6. A and B borrowed Rs. X and Rs. Y respectively from a bank at 5% per annum for 3 years and each invested that amount in a scheme which offered 2% more interest than that from the bank. After 3 years, they paid their respective debts and A made Rs 300 more profit than that of B. Find the value of X - Y.

- (a) 7500
- (b) 5000
- (c) 3500
- (d) 2500

Q7. The speed of a boat in still water is 7.5 kmph and the speed of the river is 1.5 kmph. Boat takes total 10 hours to reach a point B from A and come back to initial point. Find the distance (in km) between A and B.

- (a) 36
- (b) 20
- (c) 40
- (d) 50

Q8. If the average of square and cube of a number is equal to that of number, then find the number.

- (a) 3
- (b) -2
- (c) 1
- (d) both (b) and (c)

Q9. The ratio of present age of A, B and C is 9:11:15. If 6 years ago, the sum of their ages was 52 years, then find the difference between the present age (in years) of A and B.

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

Q10. If the ratio of efficiencies of A, B and C is 6:3:2, then find the ratio of time taken by B and C when they work alone.

- (a) 1: 2
- (b) 2 : 5
- (c) 3 : 7
- (d) 2: 3

Q11. The ratio of two numbers P and Q is 3:4. If R exceeds Q by 40 and the average of these three numbers is 50. Find the value of R.

- (a) 100
- (b) 60
- (c) 70
- (d) 80

Q12. A train crosses a tunnel in 30 seconds while the same train crosses a pole in 15 seconds. If the speed of the train is 54 km/hr, then find the length (in meters) of the tunnel.

- (a) 225
- (b) 250
- (c) 200
- (d) 350

Q13. A and B together can finish a work in X days. A takes X+ 8 days to finish the work while B takes 10 more days than A. If both A and B gets Rs. 5000 for that work and they distributed the amount in the ratio of their respective efficiency, then find the share of B (in Rs).

- (a) 4000
- (b) 3500
- (c) 2000
- (d) 3000

Q14. A, B and C started a business by investing Rs. 1200, Rs. 2400 and Rs. 1800 respectively. The ratio of time for which A, B and C invested is 4: 2: 3 respectively. They donated 50% of their profit and the share of A was Rs 800. Find the total profit (in Rs)

- (a) 4000
- (b) 3000
- (c) 6000
- (d) 5000

Q15. Vessel A contains 20 litres milk and 25 litres water. Vessel B contains 50 litres milk and 30 litres water. What quantity (in litres) of mixture from vessel A should be poured into Vessel B so that the ratio of milk to water in resulting mixture becomes 29: 20.

- (a) 36
- (b) 27
- (c) 18
- (d) 45

Directions (16-20): What will come in the place of the question mark (?) in the following number series?

Q16. 63, 73, 88, 108, ?, 163

- (a) 125
- (b) 133
- (c) 136
- (d) 132

Q17. 5, 5, 10, ?, 120, 600

- (a) 25
- (b) 20
- (c) 28
- (d) 30

Q18. ?, 53, 68, 94, 131, 179

- (a) 50
- (b) 47
- (c) 48
- (d) 49

Q19. 4, 8, 10, 20, 22, ?

- (a) 55
- (b) 26
- (c) 44
- (d) 33

Q20. 10, 21, ?, 25, 6, 29

- (a) 8
- (b) 7
- (c) 23
- (d) 34

S1. Ans.(d)

Sol.

Batsman	Total Runs	Runs scored by 4s	Total 4s hit
P	140	80	$\frac{80}{4} = 20$
Q	160	96	$\frac{96}{4} = 24$
R	180	120	$\frac{120}{4} = 30$

Since, we do not know the total runs scored by P by 6's.
So, we cannot find the total runs score by S

S2. Ans.(b)

Sol.

Batsman	Total Runs	Runs scored by 4s	Total 4s hit
P	140	80	$\frac{80}{4} = 20$
Q	160	96	$\frac{96}{4} = 24$
R	180	120	$\frac{120}{4} = 30$

Number of runs scored by running between the wickets
by R = $180 - 120 - 6 \times 2 = 48$

S3. Ans.(a)

Sol.

Batsman	Total Runs	Runs scored by 4s	Total 4s hit
P	140	80	$\frac{80}{4} = 20$
Q	160	96	$\frac{96}{4} = 24$
R	180	120	$\frac{120}{4} = 30$

Required average = $\frac{(24+30)}{2} = 27$

S4. Ans.(b)

Sol.

Batsman	Total Runs	Runs scored by 4s	Total 4s hit
P	140	80	$\frac{80}{4} = 20$
Q	160	96	$\frac{96}{4} = 24$
R	180	120	$\frac{120}{4} = 30$

Runs scored by 4s by P = 80

Remaining runs = $140 - 80 = 60$

Maximum number of 6s can be hit by P = $\frac{60}{6} = 10$

(Since, 60 is the maximum value of remaining runs which is divisible by 6)

S5. Ans.(c)

Sol.

Batsman	Total Runs	Runs scored by 4s	Total 4s hit
P	140	80	$\frac{80}{4} = 20$
Q	160	96	$\frac{96}{4} = 24$
R	180	120	$\frac{120}{4} = 30$

Required percentage = $\frac{160 - (96 + 34)}{160} \times 100 = 18.75\%$

S6. Ans.(b)

Sol.

Amount paid by A to bank = $X + X \times \frac{15}{100} = \frac{115}{100} \times X$

Amount Paid by B to bank = $Y + Y \times \frac{15}{100} = \frac{115}{100} \times Y$

Amount received by A from Scheme = $X + X \times \frac{21}{100} = \frac{121}{100} \times X$

Amount received by B from Scheme = $Y + Y \times \frac{21}{100} = \frac{121}{100} \times Y$

ATQ, $\frac{121X}{100} - \frac{115X}{100} - \frac{121Y}{100} + \frac{115Y}{100} = 300$

$\frac{6}{100} \times (X - Y) = 300$

$X - Y = \text{Rs } 5000$

S7. Ans.(a)

Sol.

Let the distance between A and B be x km

ATQ, $\frac{x}{7.5+1.5} + \frac{x}{7.5-1.5} = 10$

$\frac{x}{9} + \frac{x}{6} = 10$

$\frac{2x+3x}{18} = 10$

$5x = 180$

$x = 36$

S8. Ans.(d)

Sol.

Let the number be x

$(x^2 + x^3)/2 = x$

$x = 1, -2$

When $x = 1$

$\frac{1+1}{2} = 1$

When $x = -2$

$\frac{4-8}{2} = -2$

S9. Ans.(b)**Sol.**Let the present ages (in years) of A, B and C be $9x$, $11x$ & $15x$ respectively.

$$\text{ATQ, } 9x + 11x + 15x = 52 + 18$$

$$35x = 70$$

$$x = 2$$

$$\text{Required difference} = 11x - 9x = 2x = 4 \text{ years}$$

S10. Ans.(d)**Sol.**

$$\text{Required ratio} = \frac{1}{3} : \frac{1}{2} = 2 : 3$$

S11. Ans.(d)**Sol.**Let the numbers P and Q be $3x$ and $4x$ respectively.

$$R = 4x + 40$$

$$3x + 4x + 4x + 40 = 150$$

$$11x = 110$$

$$x = 10$$

$$R = 4 \times 10 + 40 = 80$$

S12. Ans.(a)**Sol.**Let the length of the train and tunnel be x meters and y meters respectively.

$$x = 54 \times \frac{5}{18} \times 15 = 225 \text{ m}$$

$$225 + y = 54 \times \frac{5}{18} \times 30$$

$$225 + y = 450$$

$$y = 225 \text{ m}$$

S13. Ans.(c)**Sol.**

$$X^2 = 18 \times 8$$

$$X = 12$$

$$\text{Total work} = \text{LCM} (20, 30) = 60 \text{ units}$$

$$\text{Efficiency of A} = \frac{60}{20} = 3 \text{ units/day}$$

$$\text{Efficiency of B} = \frac{60}{30} = 2 \text{ units/day}$$

$$\text{Share of B} = \frac{2}{5} \times 5000 = \text{Rs. } 2000$$

S14. Ans.(d)**Sol.**Ratio of profit share of A, B and C = $1200 \times 4 : 2400 \times 2 : 1800 \times 3 = 8:8:9$ Let the total profit be $50x$

$$\text{Amount donated} = 50x \times \frac{50}{100} = 25x$$

$$\text{Share of A} = 25x \times \frac{8}{25} = 800$$

$$8x = 800$$

$$x = 100$$

$$\text{Total profit} = 50x = \text{Rs } 5000$$

S15. Ans.(c)**Sol.**Since the ratio of milk and water in Vessel A = $20 : 25 = 4 : 5$.So, let us assume $4x$ liters milk and $5x$ liters water is added to Vessel B

$$\frac{50+4x}{30+5x} = \frac{29}{20}$$

$$1000 + 80x = 870 + 145x$$

$$65x = 130$$

$$x = 2$$

$$\text{Required quantity} = 9x = 18 \text{ liters}$$

S16. Ans.(b)**Sol.**

Pattern of the series

$$63, \quad 73, \quad 88, \quad 108, \quad 133, \quad 163$$

$$+10 \quad +15 \quad +20 \quad +25 \quad +30$$

S17. Ans.(d)**Sol.**

Pattern of the series

$$5, \quad 10, \quad 30, \quad 120, \quad 600$$

$$\times 1 \quad \times 2 \quad \times 3 \quad \times 4 \quad \times 5$$

S18. Ans.(d)**Sol.**

Pattern of the series

$$49, \quad 53, \quad 68, \quad 94, \quad 131, \quad 179$$

$$+4 \quad +15 \quad +26 \quad +37 \quad +48$$

$$+11 \quad +11 \quad +11 \quad +11$$

S19. Ans.(c)**Sol.**

Pattern of the series

$$4, \quad 10, \quad 20, \quad 22, \quad 44$$

$$\times 2 \quad +2 \quad \times 2 \quad +2 \quad \times 2$$

S20. Ans.(a)**Sol.**

Pattern of the series

$$10, \quad 21, \quad 8, \quad 25, \quad 6, \quad 29$$

$$+11 \quad -13 \quad +17 \quad -19 \quad +23$$