Directions (1-5): What will come at the place of question mark (?) in the following questions?

Q1. 7, 14, 42, 210, ?, 16170
(a) 1630
(b) 1540
(c) 1760
(d) 1470
(e) 1980

Q2.   ?,   80,   63,   48,   35,   24
(a) 111
(b) 101
(c) 99
(d) 125
(e) 108

Q3. 789, 790, ?, 825, 889, 1014
(a) 807
(b) 814
(c) 798
(d) 820
(e) 800

Q4. 4, 7, 15, 30, 54, ?
(a) 79
(b) 89
(c) 62
(d) 98
(e) 112

Q5. 1811, 1792, 1775, ?, 1751, 1744
(a) 1771
(b) 1763
(c) 1756
(d) 1767
(e) 1762

Direction (6 – 10): Table given below shows total players in five states and ratio of Football players to Badminton Players and the line graph shows percentage of Hockey players out of

total players (Hockey, Football and Badminton). Read both table and line graph carefully and answer the questions:

State	Total players	Ratio of Football to Badminton Players
U.P.	2400	7 : 5
Kerala	1250	7 : 8
Andhra	1900	3 : 2
Mizoram	2100	7 : 6
Nagaland	1450	3 : 2
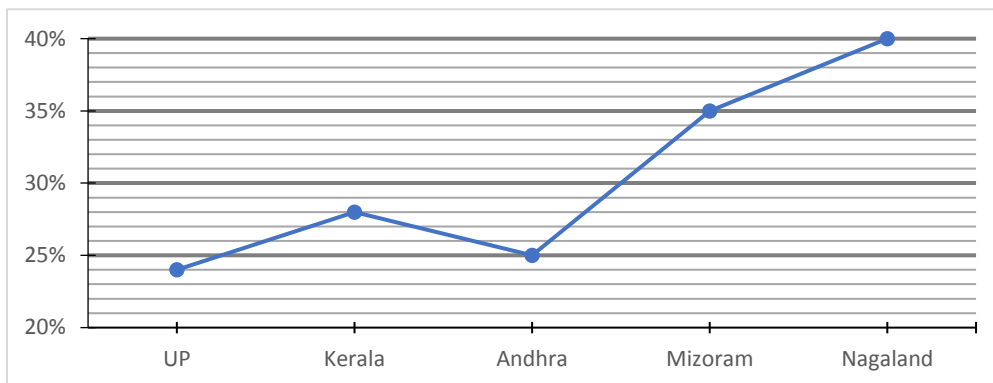
Q6.   If ratio of male to female badminton players in state Mizoram is 5 : 4, then female badminton players in Mizoram is what percent of total Hockey players in same state?
(a) $37\frac{8}{21}$%
(b) $35\frac{11}{21}$%
(c) $32\frac{3}{21}$%
(d) $38\frac{2}{21}$%
(e) $35\frac{4}{21}$%

Q7.   Football players from state Kerala and Mizoram together is how many more or less than Hockey players from state UP and Andhra together?
(a) 104
(b) 91
(c) 95
(d) 110
(e) 93

Q8. Find the ratio between badminton players from Nagaland to badminton players from Kerala?
(a) 57 : 80
(b) 29 : 40

(c) 27 : 40
(d) 40 : 27
(e) 40 : 29

Q9.   Find the total number of Football players from state UP and Kerala together and Badminton players from state Andhra and Nagaland together?
(a) 2627
(b) 2508
(c) 2402
(d) 3035
(e) 2480

Q10.   In another state Maharashtra, total players who play these sports is 20% more than total players in Nagaland. If ratio of Hockey players and Football players in state Nagaland to state Maharashtra is 116 : 83 and 174 : 145 respectively then find total number of badminton players in Maharashtra?
(a) 850
(b) 870
(c) 890
(d) 910
(e) 930

Directions (11-15): What approximate value will come in place of question mark (?) in the given questions: (You are not expected to calculate the exact value.)

Q11. ? % of $(140.06 × 7.99 – 679.92) = 330.01$
(a) 75
(b) 90
(c) 80
(d) 50
(e) 60

Q12. 40% of $859.9 + 87.89 ÷ 7.99 = ?$
(a) 398
(b) 286
(c) 412
(d) 215
(e) 355

Q13. $619.992 – 134.99 ÷ 14.998 – (9.01)^2 = ?$
(a) 720
(b) 530
(c) 650
(d) 690
(e) 490

Q14. 449.97 ÷ 15.02 + 208.08 ÷ 8.01 − 16.01 = ?
(a) 120
(b) 60
(c) 100
(d) 80
(e) 40

Q15. $4^? \times \sqrt{226} = 239.998 \div 8.001 + 929.99$
(a) 4
(b) 5
(c) 2
(d) 3
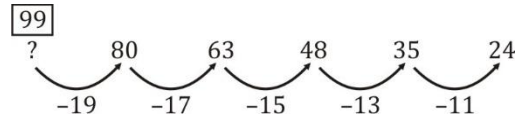(e) 1

Solutions

S1. Ans.(d)
Sol.
 7 × 2 = 14
14 × 3 = 42
42 × 5 = 210
210 × 7 = 1470
1470 × 11 = 16,170

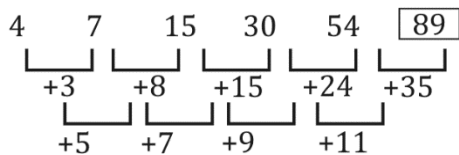S2. Ans.(c)
Sol.

S3. Ans.(c)
Sol.
$789 + (1)^3 = 790$
$790 + (2)^3 = 798$
$798 + (3)^3 = 825$
$825 + (4)^3 = 889$
$889 + (5)^3 = 1014$

S4. Ans.(b)
Sol.

S5. Ans.(e)
Sol.
1811 – 19 = 1792
1792 – 17 = 1775
1775 – 13 = 1762
1762 – 11 = 1751
1751 – 7 = 1744

S6. Ans.(d)
Sol.
Badminton players in state Mizoram
$= \left(2100 - \frac{35}{100} \times 2100\right) \times \frac{6}{13}$
$= 1365 \times \frac{6}{13}$
= 630
Required percentage $= \frac{630 \times \frac{4}{9}}{21 \times 35} \times 100$
$= 38\frac{2}{21}\%$
Or
Let total players in Mizoram = 100x
So, Hockey players = 35x
And Football and Badminton players are $\frac{65}{13} \times 7x$ and $\frac{65}{13} \times 6x$ respectively
Required percentage $= \frac{30x \times \frac{4}{9}}{35x} \times 100$
$= \frac{30 \times 4}{35 \times 9} \times 100$
$= \frac{40}{105} \times 100$
$= 38\frac{2}{21}\%$

S7. Ans.(a)
Sol.
Football player from Kerala
$= \left(1250 - 1250 \times \frac{28}{100}\right)\frac{7}{15}$
= 420
Football player from Mizoram
$= \left(2100 - 2100 \times \frac{35}{100}\right)\frac{7}{13}$
= 735
Football players from Kerala and Mizoram together
= 420 + 735 = 1155
Hockey player from U.P. $= 2400 \times \frac{24}{100} = 576$
Hockey player from Andhra $= 1900 \times \frac{25}{100} = 475$

Hockey player from UP and Andhra together = 576 + 475 = 1051
Required difference = 1155 – 1051 = 104

S8. Ans.(b)
Sol.
Badminton player from Nagaland = $\left(1450 - 1450 \times \frac{40}{100}\right) \times \frac{2}{5}$ = 348
Badminton player from Kerala = $\left(1250 - 1250 \times \frac{28}{100}\right) \times \frac{8}{15}$ = 480
Required Ratio = $\frac{348}{480} = \frac{29}{40}$

S9. Ans.(c)
Sol.
Football players from state UP and Kerala together
= $\left(2400 - 2400 \times \frac{24}{100}\right) \times \frac{7}{12} + \left(1250 - 1250 \times \frac{28}{100}\right) \times \frac{7}{15}$
= 1064 + 420
= 1484
Badminton player from state Andhra and Nagaland
= $\left(1900 - 1900 \times \frac{25}{100}\right) \times \frac{2}{5} + \left(1450 - 1450 \times \frac{40}{100}\right) \times \frac{2}{5}$
= 570 + 348
= 918
Required sum = 1484 + 918 = 2402

S10. Ans.(c)
Sol.
Total players in Maharashtra
= $\frac{120}{100} \times 1450$
= 1740
Hockey players in Nagaland
= $1450 \times \frac{40}{100}$
= 580
Hockey players in Maharashtra
= $\frac{580}{116} \times 83$
= 415
Football players in Nagaland
= $\left(1450 - 1450 \times \frac{40}{100}\right) \times \frac{3}{5}$
= 522
Football players in Maharashtra
= $\frac{522}{174} \times 145$
= 435
Badminton players in Maharashtra
= 1740 – 415 – 435

= 890

S11. Ans.(a)
Sol.
?% of (140.06 ×7.99 – 679.92)
= 330.01

or, $\dfrac{? \times (140 \times 8 - 680)}{100} \approx 330$

or, $? \times (1120 - 680) \approx 330 \times 100$

or, $? \times 440 \approx 33000$

$\therefore ? = \dfrac{33000}{440} = 75$

S12. Ans.(e)
Sol.
? = 40% of 859 + 87.89 ÷ 7.99

$\approx \dfrac{40 \times 860}{100} + 88 \div 8$

$\approx 344 + 11 = 355$

S13. Ans.(b)
Sol.
$? = 619.992 - 134.99 \div 14.998 - (9.01)^2$

$\approx 620 - 135 \div 15 - (9)^2$

≈ 530

S14. Ans.(e)
Sol.
? = 449.97 ÷ 15.02 + 208.08 ÷ 8.01 – 16.01

$\approx 450 \div 15 + 208 \div 8 - 16$

= 30 + 26 – 16

= 30 + 10

= 40

S15. Ans.(d)
Sol.
$4^? \times \sqrt{226} = 239.998 \div 8.001 + 929.99$

or, $4^? \times \sqrt{225} \approx 240 \div 8 + 930$

Or, $4^? \times 15 \approx 30 + 930 = 960$

or, $4^? \approx \dfrac{960}{15} = 64 = 4^3$

or, $4^? \approx 4^3$

$\therefore ? \approx 3$