

what percent of the total number of people...



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MODEL QUESTIONS

Directions(Q.NO.1-5): In the following questions two equations numbered I and II are given. You have to solve both the equations and give answer:

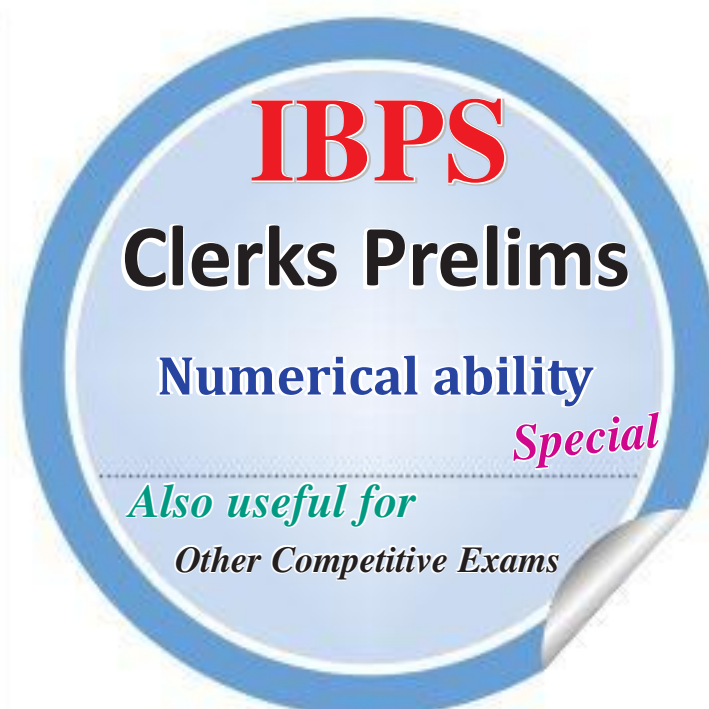
- a) If $x > y$ b) If $x \geq y$
c) If $x < y$ d) If $x \leq y$
e) If $x = y$ or the relationship cannot be established.
1. I. $3x^2 + 8x + 4 = 0$
II. $4y^2 - 19y + 12 = 0$
2. I. $x^2 + x - 20 = 0$
II. $y^2 - y - 30 = 0$
3. I. $x^2 - 365 = 364$
II. $y - \sqrt{324} = \sqrt{81}$
4. I. $x^2 + 14x + 49 = 0$
II. $y^2 + 9y = 0$
5. I. $5x + 2y = 31$
II. $3x + 7y = 36$
6. The average weight of P, Q and R is 92 kg. If S joins the group, the average weight of the group becomes 89 kg. If another man T who weighs 5 kg more than S,

replaces P, then the average of Q, R, S and T becomes 87 kg. What is the weight of P?

- a) 91 kg b) 92 kg
c) 93 kg d) 94 kg
e) None of the above

Directions(Q.No.7-11): There are three villages: A, B and C containing a total number of 800 people combined, 25% of whom are in village A. The male to female ratio in village A is 3 : 2. Males in village B is 100% more than the number of males in village A and (5/11) of all people in village B are females. In all three villages combined, there are 120 more males than females

7. What is the difference between the number of males and females in village C?
a) 35 b) 50 c) 45
d) 40 e) 30
8. The sum of the number of females in villages A and C is what percent of the sum of the number of males in villages A and females in village B?
a) 37.5% b) 43.75%
c) 56.25% d) 68.75%
e) 31.25%
9. What is the ratio of the difference between the number of males and



females in village A to that in village B?

- a) 1 : 1 b) 4 : 5 c) 5 : 4
d) 6 : 5 e) 5 : 6
10. If, in village B, overall literacy rate is 68(2/11)% and male literacy rate is 75%, what is the female literacy rate?
a) 45% b) 60% c) 65%
d) 55% e) 50%
11. Males in village B is what percent of the total number of people in three villages combined?
a) 30% b) 25% c) 35%
d) 40% e) 45%
12. A and B started a business making an initial investment of Rs.15000 and Rs.24000 respectively. At the end of the year A

got a total amount (Amount invested + Profit before tax) of Rs.20000. If they have to pay income tax on the total profit @10% then how much tax they have paid?

- a) Rs.1300 b) Rs.1500
c) Rs.13000 d) Rs.850
e) Rs.1150

13. If the price of oil increases by 25%, by what percentage should the consumption be reduced so that the expenditure on oil can be the same?
a) 20% b) 25% c) 30%
d) 35% e) None of the above
14. Ramesh bought two articles for Rs.400 and Rs.500 respectively and he sold with them a profit of 10% and a loss of 5% on them respectively. What is the overall profit/loss % realized by Ramesh?
a) Profit of 2.3%
b) Loss of 1.67%
c) Profit 1.67%
d) Profit 1.5%
e) Neither profit nor loss
15. Following is the information about the married and unmarried employees in a company: The ratio of the number of

married males to married females is 10:9 and the ratio of the number of married females to unmarried females is 9 : 8. There are 850 people in total and 475 people are married in that. What is the male to female ratio in the company?

- a) 2 : 1 b) 1 : 1 c) 6 : 5
d) 5 : 4 e) 1 : 2

16. The ratio of the present ages of A and B is 1 : 3. If the ratio of their ages 1 years ago was 8 : 25, what is the present age of B?
a) 41 years b) 49 years
c) 39 years d) 51 years
e) 55 years
17. Present price of a washing machine is Rs.10000. What will be the price of machine after 2 years, if price increases at the rate of 30% per annum and 15% per annum in the next two successive years?
a) Rs.16545 b) Rs.14540
c) Rs.14645 d) Rs.14950
e) Rs.16540
18. If a number is added to seven-ninth of thirty five per cent of 900, the value so obtained is 325. What is the number?
a) 60 b) 120 c) 90
d) 180 e) None of these

KEY & SOLUTIONS

1. **c;** $\frac{x}{-6} = \frac{y}{16}$
 $\frac{2}{3} = \frac{3}{4}$
 $x < y$
2. **e;** $x = -5$ $y = 6$
 $x = 4$ $y = -5$
3. **d;** $x^2 = 729$
 $x = \pm 27$
 $x = 27, x = -27$
 $y = 27$
4. **e;** $\frac{x}{-7} = \frac{y}{0}$
 $\frac{-7}{-7} = \frac{-9}{-9}$
5. **a;** $5x + 2y = 31$ — (1)
 $3x + 7y = 36$ — (2)
Solve equation (1) and (2)
 $\therefore x = 5, y = 3$ $x > y$
6. **c;** Total weight of P, Q and R = $92 \times 3 = 276$ kg
Total weight of P, Q, R and S = $89 \times 4 = 356$ kg
Then weight of S = $356 - 276 = 80$ kg
Therefore weight of T = $80 + 5 = 85$ kg
Total weight of Q, R, S and T = $87 \times 4 = 348$ kg
Total weight of Q and R = $348 - 80 - 85 = 183$
Hence weight of P = (Total weight of P, Q and R) – (Total weight of Q and R) = $276 - 183 = 93$ kg
7. **d;** Number of people in village A = $\frac{25}{100} \times 800 = 200$

Number of males in village A = $\frac{3}{5} \times 200 = 120$

Number of females in village A = $200 - 120 = 80$

Number of males in village B = $\frac{200}{100} \times 120 = 240$

Females comprise of $\left(\frac{5}{11}\right)$ of people in village B

So, males comprise of $\left(\frac{6}{11}\right)$ of people in village B

So, Number of people in village B = $\frac{11}{6} \times 240 = 440$

Number of females in village B = $440 - 240 = 200$

Let the total number of males and females in all 3 villages combined be 'x' and 'y' respectively.

So, $x + y = 800$ — (i)
And $x - y = 120$ — (ii)

(i) + (ii) gives, $x = 460$ and $y = 340$

Number of males in Village C = $460 - 120 - 240 = 100$

Number of females in village C = $340 - 80 - 200 = 60$

Tabulating the data:

Village	Number of males	Number of females	Total
A	120	80	200
B	240	200	440
C	100	60	160
Total	460	340	800

Required difference = $100 - 60 = 40$

8. **b;** sum of the number of females in villages A and C = $80 + 60 = 140$

sum of the number of males in villages A and females in village B = $120 + 200 = 320$

Required percentage = $\frac{140}{320} \times 100\% = 43.75\%$

9. **a;** Required ratio = $(120 - 80) : (240 - 200) = 1 : 1$

10. **b;** Number of literate people in village B

= $68\left(\frac{2}{11}\right)\%$ of $440 = 300$

Number of male literate people in village B

= $\frac{75}{100} \times 240 = 180$

Number of female literate people in village B = $300 - 180 = 120$

So, female literacy rate = $\frac{120}{200} \times 100\% = 60\%$

11. **a;** Required percentage = $\frac{240}{800} \times 100\% = 30\%$

12. **a;** Ratio in which Profit will be divided between Jai and Vijay = $15000 : 24000 = 5 : 8$

Total profit that obtained by A at the end of the year = Rs (20000 - 15000) = Rs 5000

Hence total profit that both A

and B obtained at the end of the year = Rs $\frac{5000}{5} \times 13 =$ Rs 13000

Therefore, total tax paid by A and B at the end of the year = Rs $(13000 \times 0.1) =$ Rs 1300

13. **a;** Let initial price be P.
Let consumption be C.
Let consumption after decrease be "C× R".
 $1.25P \times C \times R = P \times C$

$R = \frac{1}{1.25} = 0.8$

So the decrease = $C - 0.8C = 0.2C$ which is 20%.

14. **c;** Total cost price of the two articles = Rs $(400 + 500) =$ Rs 900

Selling price of the first article = Rs $(400 \times 1.1) =$ Rs 440

Selling price of the second article = Rs $(500 \times 0.95) =$ Rs 475

Hence total selling price of two article = Rs $(440 + 475) =$ Rs 915

Hence overall profit % = $\frac{915 - 900}{900} \times 100 = 1.67\%$

15. **b;** Number of married males = $\frac{10}{19} \times 475 = 250$

Number of married females = $475 - 250 = 225$

Number of unmarried females = $\frac{8}{9} \times 225 = 200$

Number of females = $225 + 200 = 425$

Number of males = $850 - 425 = 425$

Required ratio = 1:1

16. **d;** Let the present ages of A and B be 'x' years and '3x' years respectively.
 $\frac{(x-1)}{(3x-1)} = \frac{8}{25}$

$\Rightarrow 25x - 25 = 24x - 8$

$\Rightarrow x = 17$

Present age of B = $3 \times 17 = 51$ years

17. **d;** Whenever the value of a commodity is increased successively by x% and y% we can use the following formula to find the net increment:

Net increment = $x + y + \frac{xy}{100}$

Increment in the cost of the washing machine

= $\frac{30 + 15 + 450}{100} = 49.5\%$

The increment in the cost price of the machine

= $\frac{(49.5 \times 10000)}{100} =$ Rs.4950

The final cost of the machine will be = Rs. 10000 + Rs. 4950 = Rs. 14950

18. **e;** $x + \frac{7}{9} \times \frac{35}{100} \times 900 = 325$

$x = 80$