41) Ratio of the efficiency of A and B is 3:2 and the efficiency of A is 200% more than that of C. If B and C together can complete the work in 60 days, in how many days A and B together can complete the work?

A. 24 days
B. 30 days
C. 36 days
D. 42 days
E. 45 days

In 1 day
A → 3x work
B → 2x "
C → x "

C → 100
A → 300
A : C = 3 : 1
3x : x

(B+C) × 60 = Total Work.
(2x+x) × 60 = " "
180x = " "

(A+B) × N = Total Work = 180x
(3x+2x) × N = 180x

5% × N = 180%
N = 180/5 = 36

43) The present age of Arul's father is four times the present age of Arul. Four years ago, the age of Arul's father is six times the age of Arul's age at that time. Arul's grandfather's age is seven times the present age of Arul. Find the difference between the present age of Arul's father and grandfather?

A. 20 years
B. 30 years
C. 15 years
D. 25 years
E. 35 years

	Arul	Father	GF
Present	x	4x	7x
4 yrs ago	x-4	4x-4	

4x - 4 = 6(x-4)
4x - 4 = 6x - 24
20 = 2x
x = 10

GF - Father
= 7x - 4x
= 3x

Profit = SP - CP
Profit % = (SP - CP)/CP × 100

CP → Markup → MP → discount → SP.
5x → 9x

SP = 80% × 75% × MP.
= 80% × 75/100 × MP
= 80% × 3/4 × MP
= 60% × MP

9x = 3600
x = 400
CP = 5x = 2000

44) Ratio of the Marked price to the cost price of the laptop is 9:5. The shopkeeper allows two successive discounts of 20% and 25% respectively. If the shopkeeper sold it at a single discount of 35%, he would have gained Rs.180 more. Find the selling price of the laptop at a profit of 30%?

A. Rs.3900
B. Rs.3600
C. Rs.3400
D. Rs.2800
E. Rs.2600

If SP = 65% × MP
5% × MP = 180.
MP = 180/5 × 100 = 3600.

SP = 130% × CP
= 2600.

45) Suman invests Rs.(x + 1000) in a compound interest scheme at the rate of 10% per annum for 2 years and he also invests Rs.x in a simple

Compound interest
Amount = P(1 + r%)^n.

45) Suman invests Rs.(x + 1000) in a compound interest scheme at the rate of 10% per annum for 2 years and he also invests Rs.x in a simple interest scheme at the rate of 15% per annum for 3 years. The interest received on a simple interest scheme is Rs.750 more than that of a compound interest scheme. Find the value of x?

A. Rs.3600
B. Rs.4000
C. Rs.4200
D. Rs.4400
E. Rs.4800

Amount $= P(1+r\%)$

$= (x+1000)\left(1+\frac{10}{100}\right)^2$

$1.1^2 = 1.21$

Interest = Amount − Principal

$= (x+1000)(1.1)^2 - (x+1000)$

$= 1.21(x+1000) - (x+1000)$

$= (x+1000)(1.21-1)$

$= 0.21(x+1000)$

Simple interest

$\text{Interest} = \frac{Prn}{100} = \frac{x \cdot 15 \cdot 3}{100}$

$= \frac{45x}{100}$

$0.45x - 0.21(x+1000) = 750$

$0.24x - 210 = 750$

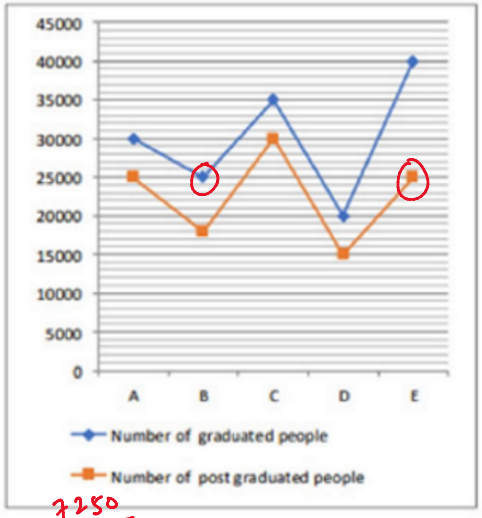
$0.24x = 960$

$x = \frac{960}{24} \times 100$

$x = 4000$

Directions (46-50): Study the following information carefully and answer the questions given below.

The given line graph shows the number of graduated people and the number of post graduated people in five different villages.



50) Ratio of the post graduates people in E and F is 5:7 and the number of graduate people in F is 4000 more than the number of graduates people in B. If the ratio of the number of male to female post graduates and graduates people in F is 3:2 and 3:1 respectively, then find the number of female post graduates and graduates people in F?

A. 21200
B. 21240
C. 21210
D. 21250
E. 21300

$\frac{E}{F} = \frac{5}{7} = \frac{25000}{x}$

$F = \frac{7}{5} \times 25000$

$= 35000$

Pg in F = 35000

G in F = 29000

	Pg	G
M	21000	21750
F	14000	7250

21750

7250

$\frac{3}{4} \times 29000$

$M = \frac{3}{5} \times 35000$

$= 21000$

Directions (51-56): Following question contains two equations as I and II. You have to solve both equations and determine the relationship between them and give an answer as,

51)

I) $x^2 - 15x + 54 = 0$

II) $y^2 - 4y - 117 = 0$

A. x > y

$x^2 - 15x + 54 = 0$

6×9

$x^2 - 9x - 6x + 54 = 0$

$x(x-9) - 6(x-9) = 0$

$(x-9)(x-6) = 0$

$x = 9, 6$

II) $y^2 - 4y - 117 = 0$

A. $x > y$

B. $x \geq y$

C. $x = y$ or relationship can't be determined.

D. $x < y$

E. $x \leq y$

$x(x-9) - 6(x-9) = 0$

$(x-9)(x-6) = 0$

$x = 9, 6$

$y^2 - 4y - 117 = 0$

-13×9

$y = 13, -9$

$y^2 - 13y + 9y - 117 = 0$

$y(y-13) + 9(y-13) = 0$

$(y-13)(y+9) = 0$