1). Subject = 5

each subject max = 105

$5 \times 105 = 525$

total marks scored $= 0.80 \times 525 = 420$

handful scores subjects:

Hindi = 89

Sanskrit = 92

mathematics = 98

English = 81

$89 + 92 + 98 + 81 = 360$

formal = total marks scored − other subject scored

$420 - 360$

$= 60$

② Rice = 12x

fish = 17x

oil = 3x

total expenses $= 12x + 17x + 3x = 32x$

new rice price $= 12x + 0.20 \times 12x = 12x$

$x(1 + 0.20) = 12x \times \frac{6}{5} = \frac{72x}{5}$

new fish price $= 17x + 0.30 \times 17x = 17x$

$x(1.30) = 17x \times \frac{13}{10} = \frac{221x}{10}$

new oil price $= 3x + 0.50 \times 3x = 3x \times (1 + 0.50)$

$= 3x \times \frac{3}{2} = \frac{9x}{2} = \frac{45x}{10}$

new total expenses $= \dfrac{72x}{5} \times \dfrac{22x}{10} + \dfrac{96x}{10}$

144

$= \dfrac{1221+115}{10} = \dfrac{410x}{10} = 41x$

percentage increase $= \dfrac{\text{new total} - \text{old total}}{\text{old total}} \times 100$

$= \dfrac{41x - 32x}{32x} \times 100\% = \dfrac{9x}{32x}$

$\times 100 = \dfrac{9}{32} \times 100\%$

$\dfrac{9 \times 100}{32} = \dfrac{900}{32} = 28 \cdot 125\%$

$28\dfrac{1}{8}\%$

$= 28 1/8 \%$

3) total families in village $= 96$

families with cows $= 60\%$

families with buffaloes $= 30\%$

families with both cows and buffaloes $= 15\%$

Number of families with cows:

$60\% \text{ of } 96 = \dfrac{60}{100} \times 96$

$= 57.6 \text{ (or) } 58 \text{ families.}$

number of families with buffaloes:

$30\% \text{ of } 96 = \dfrac{30}{100} \times 96$

$= 28.8 \text{ (or) } 29 \text{ families.}$

number of families with both cows and buffaloes:

$15\% \text{ of } 96 = \dfrac{15}{100} \times 96$

$= 14.4 \text{ (or) } 14 \text{ families}$

families with cows (and) buffaloes $= 58 + 29 - 14$

$= 73 \text{ families}$

families without cows $= 96 - 73 = 23 \text{ families}$
and buffaloes

100
300
‾‾‾‾
410
32
‾‾‾‾
338

4). Population 3 year ago = 1,60,000

First year Progress = 3%

$$160\,000 \times \frac{3}{100} = 4,800$$

$$4,800 + 160\,000 = 1,64,800$$

Second year increase = 2.5%

$$1,64,800 \times \frac{2.5}{100} = 4,120$$

$$= 1,64,800 + 4,120 = 168,920$$

Third year increase = 5%

$$1,68,920 \times \frac{5}{100} = 8,446$$

$$= 168,920 + 8,446 = 177,366$$

after 3 year Population = 1,77,366

5. original number of seats = S
   original price of tickets = P
   original revenue = R

$$R = S \times P$$

$$S = S \times (1 - 0.12) = S \times 0.88$$

$$P = P \times (1 - 0.04) = P \times 0.96$$

$$R = S \times P = (S \times 0.88) \times (P \times 0.96)$$

$$= S \times P \times 0.88 \times 0.96$$

$$R = R \times (0.88 \times 0.96)$$

$$= 0.88 \times 0.96 = 0.8448$$

$$R = R \times 0.8448$$

change in revenue $= R - R = R \times 0.8448 - R = R \times (0.8448 - 1)$

b)

$B = 15\,000$

$A =$

$A = B + 0.25 \times (A + B)$

$A = B + 0.25 A + 0.25 B$

combining terms

$A - 0.25 A = B + 0.25 B$

$0.75 = 1.25 B$

$B = 15000$

$0.75 A = 1.25 \times 15000$

$0.75 A = 18750$

$A = \dfrac{18750}{0.75} = 25000$

votes cast by party $B = A - B = 25000 - 15000$

Party B loses the election $= 10\,000/-$

by $10,000$

d)

A

$P = price$

$50 \times P = 50P$

increase 30% price

now $= P + 0.3P = 1.3P$

family now expenditure is 20%

$= 1.2 \times 50P = 60P$

consumption $= x$

$= x \times 1.3P$

$60 = x \times 1.3P$

divided both side by P

$60 = 1.3x$

$x = \dfrac{60}{1.3}$ (or) 46.15

now ~~~ consumption ~ 46 Kg