

Word ProblemsEx-3.42(i) Suppose $N = x$ $D = y$ fraction = $\frac{x}{y}$

I
$$\frac{x+1}{y-1} = 1$$

$$x+1 = y-1$$

$$x - y = -2 \text{ (i)}$$

IInd
$$\frac{x}{y+1} = \frac{1}{2}$$

So $2x = y+1$

$$2x - y = 1 \text{ (ii)}$$

(iii) Present age of Nuri = x
" " " Sonu = y

5 yrs ago

$$x-5 = 3(y-5)$$

$$x-5 = 3y-15$$

$$x-3y = -10 \text{ (i)}$$

10 yrs ago

$$x+10 = 2(y+10)$$

$$x+10 = 2y+20$$

$$x-2y = 10 \text{ (ii)}$$

(iii) Tenth place digit = x
Unit " " " = y

$$No = 10x + y$$

$$New no. = 10y + x$$

Ist
$$x+y = 9 \text{ (i)}$$

IInd
$$9(10x+y) = 2(10y+x)$$

$$90x + 9y = 20y + 2x$$

$$\Rightarrow 88x - 11y = 0 \quad \text{or} \quad \text{divide by 11}$$

$$8x - y = 0 \text{ (ii)}$$

(iv) ^{sub}
(iv) 100rs note = x
50 " " " = y

I
$$x+y = 25 \text{ (i)}$$

$$100x + 50y = 2000$$

divide by 50

$$2x + y = 40 \text{ (ii)}$$

(v) ^{sub} fixed charge for 3 days = x
per day extra charge = y

I
$$x+4y = 27 \text{ (i)}$$

II
$$x+2y = 21 \text{ (ii)}$$

Ex-3.5 Word Problems

4(i) fixed Monthly charge = x
 Charge^{or} food per day = y

I $x + 20y = 1000$ (i)
 $x + 26y = 1180$ (ii)

(ii) Subb $x = x$
 $y = y$

I $\frac{x-1}{y} = \frac{1}{3}$

So $3x-3 = y$
 $3x-y = 3$ (i)

IInd $\frac{x}{y+8} = \frac{1}{4}$

$\Rightarrow 4x = y+8$
 $4x-y = 8$ (ii)

(iii) Subb Correct Ans = x
 Wrong Ans = y

I $3x-y = 40$ (i)
 IInd $4x-2y = 50$ (ii)

(iv) ^{Subb} Speed of Car start from A = x km/hr
 " " " " " B = y km/hr

Speed = $\frac{\text{Distance}}{\text{Time}}$

I $x-y = \frac{100}{5}$
 $x-y = 20$ (i)

IInd $x+y = \frac{100}{1}$
 $x+y = 100$ (ii)

(v) ^{Subb} Length of Rectangle = x
 breadth " " = y
 Area " " = xy

Ist $(x-5)(y+3) = xy-9$
 $xy+3x-5y-15 = xy-9$
 $3x-5y = 6$ (i)

IInd $(x+3)(y+2) = xy+67$
 $xy+2x+3y+6 = xy+67$
 $2x+3y = 61$ (ii)

Condition for Solution of Eqn -

for $a_1x + b_1y + c_1 = 0$
Pair of Linear Eqn $a_2x + b_2y + c_2 = 0$

	<u>Type</u>	<u>No. of Soln</u>	<u>Lines</u>
I st If $\frac{a_1}{a_2} \neq \frac{b_1}{b_2}$	Consistent	Unique (1)	Intersecting (X)
II nd If $\frac{a_1}{a_2} = \frac{b_1}{b_2} \neq \frac{c_1}{c_2}$	Inconsistent	No Solution	Parallel (\Rightarrow)
III rd If $\frac{a_1}{a_2} = \frac{b_1}{b_2} = \frac{c_1}{c_2}$	Consistent	Infinite or Many Soln	<div>↓ Coincident lines</div>