Quants TCS NQT

(1) $A = 3P$

Two digit number can be expressed as :- eg → 45

$\Rightarrow 4 \times 10 + 5 \times 1$

So, $10 * P + A \times 1$

$= 10 \times P + 3P$

$\Rightarrow 13P$

B is prime number, and the condition is the number is multiple of 3.

↳ So, P must be multiple of 3.

P can be 3, 6, 9, 12, ---so on

↳ 39 for P is 3.

↳ 68 for P is 6. ×

P is 3 → $3P \Rightarrow A \Rightarrow 9$

(2) Rajesh has 50₹ denomination of ₹850

$\Rightarrow \frac{850}{50}$ = 17 notes

Latha has 20₹ denomination of ₹400

$\Rightarrow \frac{400}{20}$ = 20 notes

So, after redistribution the probability is maximized of finding 50 note.

~~P(choosing)~~

50₹ 1 note in P1 & rest in P2.

P(1) + P(2)

$\Rightarrow \frac{1}{2} \times \frac{1}{1} + \frac{1}{2}\left(\frac{16}{36}\right)^{4/2}$

$\Rightarrow 0.5 + \frac{2}{9}$

$\Rightarrow 0.5 + 0.222 \Rightarrow 0.722$

Date :

Puse 2 has much money

$16(50\overline{z}) + 20(20\overline{z})$

$\Rightarrow 800 + 400$

$\Rightarrow 1200\overline{z}$

(3) $\frac{3x^2 - mx + 10}{x-3}$ → Remainder = 8 - 2

means for example

$\frac{10}{3}$ → Remainder ⇒ 2

$\frac{10+2}{3} \Rightarrow$ Rema → 0

$\frac{(3x^2 - mx + 10) + 2}{(x-3)}$ → Remainde = 2

In quadratic equation.

$(x-3)$ is root of $3x^2 - mx + 10 + 2$

$x = 3$ Put $x = 3$ in eq.

$27 - 3x + 12 = 0$

$39 = 3x \Rightarrow x = 13$

(4) R → 5days → $\frac{120}{100} \times 5 = 6$ days

S → 8 days ⇒ $\frac{125}{100} \times 8 = 10$ days

M → 10 days ⇒ $\frac{150}{100} \times 10 = 15$ days

One day work and the combined

$\left(\frac{1}{6} + \frac{1}{10} + \frac{1}{15}\right) \Rightarrow \frac{1}{3}$

This is Combine 1 day work so reverse is 3 days.

(5) Revenue = No. of product × SP of each

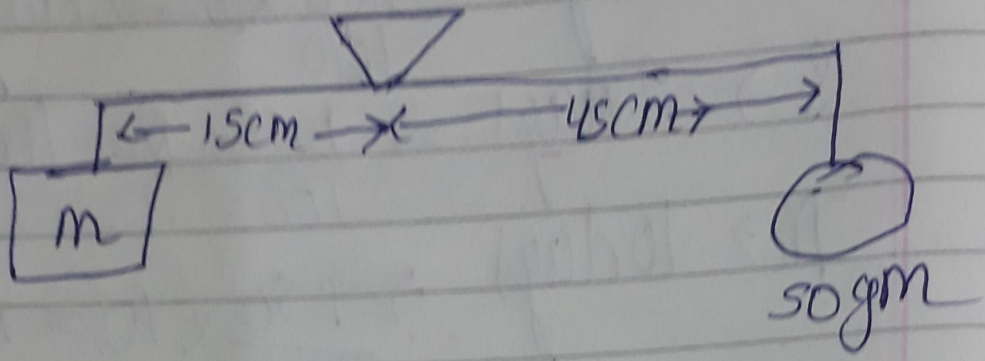
for service based =

Revenue = No. of hour × Cost/hour

⇒ $t \times 50$

⇒ 50t

6)



$\tau = r F \sin\theta$

$\tau = \gamma F \sin\theta$.

$F = ma \Rightarrow m \times g$

$\Rightarrow mg$

$\tau \rightarrow$ Torque $\gamma \rightarrow$ Radial distance.

$F =$ force $\Rightarrow mg$

$\sin\theta \Rightarrow$ Angle b/w weight & rod

$\tau_1 = \gamma F \sin\theta$ $\quad$ $\tau_2 = \gamma F \sin 90$

$\tau_1 = 15 \times mg \sin 90$ $\quad$ $\tau_2 = 45 \times 50g \times 1$

$\Rightarrow 15mg$.

They are in balance. then $\tau_1 = \tau_2$

$\tau_1 = \tau_2$

$15mg = 45 \times 50g$

$m = 3 \times 50 \Rightarrow 150gm$

7→ 2037 → 100 y.

2027 → 50 y.

(8) if ten's digit → x

then units digit → 2x

eg → 24 then 2x10 + 4x1

⇒ 20 + 4

then, Here

Number will be → 10x + 2x

⇒ 12x

U → x (After reversing number).

T → 2x

Number → 10(2x) + x

⇒ 21x

Subtract 36

21x - 36 = 12x

9x = 36

x = 4

Tens → 4

Units → 2x = 8

48 → 4

9) given in question

6.3 h/day in 2018 ₹ 105x/100

In 2017 the time was

x hours/day.

In 2018 increase by 5%.

$$\frac{105x}{100} = 6.3 \text{ hours/day}$$

$$x = \frac{63 \times 100}{105} \Rightarrow 6 \text{ hours/day}$$

10) Initially Bmw travelled for 3 hours

B → 3

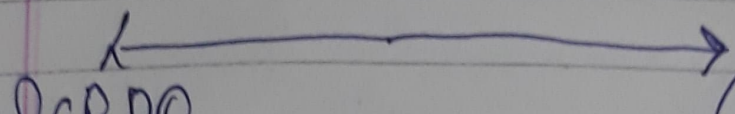
P → 0

Then police travelled for 4 hours

B → 3+4 → 7 hours

P → 4

distance is same for both



Spee = $\frac{\text{distance}}{\text{time}}$

For police, $83 = \frac{x}{4}$

$x = 332$ km

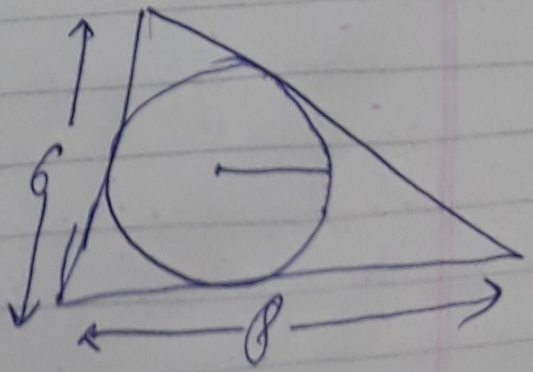
For BMW

$T = 7$ hours

$D = 332$

$S = \frac{332}{7} = 47.43$ kmph

(10) Circle inscribed in right angle triangle



Area of triangle

= Semi perimeter × radius

Semiperimeter $= \frac{a+b+c}{2}$

$a = 6$

$b = 8$

$c = \sqrt{6^2+8^2} \Rightarrow 10$

$\frac{a+b+c}{2} \Rightarrow \frac{6+8+10}{2} \Rightarrow \frac{24}{2} = 12$

Area of $T \Rightarrow \frac{1}{2} \times b \times h$

$\Rightarrow \frac{1}{2} \times 8 \times 6$

$\Rightarrow 24$

$24 = 12 \times r$ → by inscribed formula

$\boxed{r = 2}$

$r \Rightarrow 2ft$