20/08/19

Economics

→ Economics is the allocation of scarce resources amongst the alternatives ends to meet unlimited wants.

→ Allocate: Fix / Assign / Manage

→ Resources: Things for production and distribution
Factors of Production.

→ Alternatives: Choices, Desire and decision

→ Economic Models: are simplified versions of reality to understand complex situations.

⇒ **Perfect Market:**

1) Many byers and sellers
2) Producers are price takers
3) No Taxes no licenses
4) Entry in exit is easy
5) No goverenment is involved.

Opportunity cost: Things that we have left behind Choice which we have sacrificed.

Trade off: ~~to~~ Decisions that we have stick to.

23/08/19

Fallacies in economics

1) Fallacy of composition
2) Post Hoc Fallacy

⇒ Fallacy: It refers to a misleading argument.

⇒ Fallacy of composition:- A situation which is true for one may not be true for the others.

① Eg: An employee who is not punctual.
→ To reach on time, Instructions to the particular employee, is not for the entire department.

② Eg: Extra class for one student.
→ extra hours for the student are not for the entire class.

⇒ Post Hoc Fallacy:
→ Cause and effect in this type of fallacy are not clear.

① Eg: Student's CGPA: is average because he is overweight.
↓
cause and effect are not clear.

(2) Eg: Faculty member does not prepare for a session because of the High student strength.

(3) Eg: Stock exchange is not performing because there is no greenery / trees in the city.

TYPES OF ECONOMICS.

1) Positive Economics
2) Normative Economics

⇒ Positive Economics: is about facts and figures which can't be changed.

(1) Eg: Literacy Rate: is less in Pakistan ~~is le~~ than in Srilanka, Bangladesh and India. (A fact that can't be changed).

⇒ Normative Economics: emphasing on the remedies.

Terms: Should, MUST.

(1) Eg: The government should ~~con~~ take measures to control the population.

(2) Eg: The government should improve Biletral relations.

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Both Positive & Normative

(3)
Eg: (Although the nuclear energy is good) but it should not be use for destruction.

26/08/19.

⇒ Rationalisation: Win an Argument with a logic

Basic Resources in Economics

1) LAND → Natural endowment or gift of nature.
2) Labour → Mind and body.
3) Capital → refers to equipment / infrastructure to create jobs and people earn.
4) Entreprenuer → creative heads and the risk taker adding value to the society

Demands

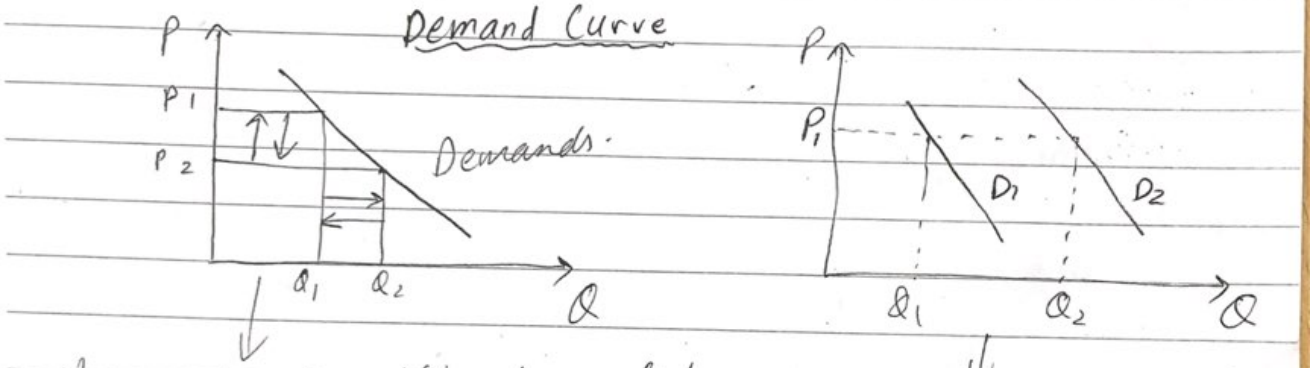
→ product
→ Income
→ Choice / Substitutes
→ Ability
→ Reason (Willingness)

⇒ law of demands

$$\text{Price} \propto \frac{1}{\text{quantity demanded}}$$

Demands refers to.

⇒ Desire backed by ability and willingness of an individual to purchase goods and services at different prices.



27|08|19

Demands And Supply.

⇒ Determinants of demand:

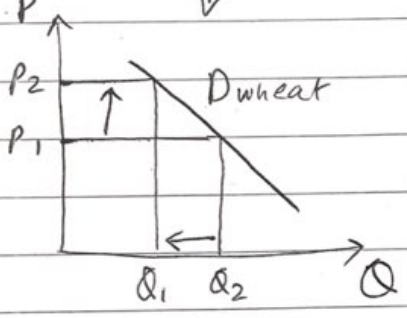
1) price → -vely related
2) income → +vely related
3) substitutes and complements
4) customers → +vely related.
5) culture/seasons
6) Time

⇒ Substitutes: Wheat and Rice.

eg: If wheat price increases then demand of rice should increase.

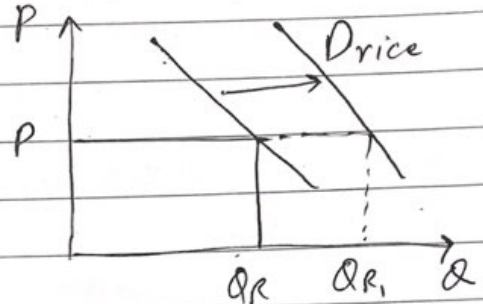
⇒ are the parallel products may be under different name but similar in functions.

movement along the demand curve due to the price change



change in quantity demanded ↓

It refers to the entire shift in the demand curve



Change in demands ↑

⇒ Complements :- Goods which go together

Eg: vehicle — fuel
cellphone — sim

which can use together.

⇒ Customers :-

↑ Customers → ↑ demands → ↑ Production
↓ Customers → ↓ demands → ↓ Production

⇒ Time :- with time decision making improves, we gain experience

Supply

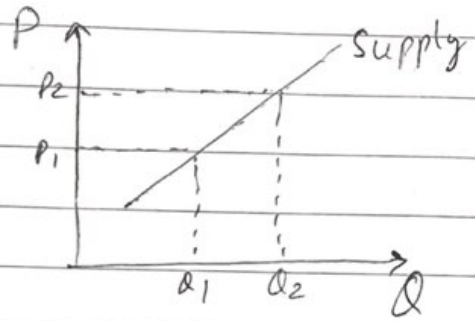
It is the ability backed by the willingness of the producer to make the goods available at different prices.

⇒ Law of supply:

"As the price increases quantity supplied also increase.", because when price increases producer gets more profit and produces more.

movement along the supply
entire curve due to the price
change.

Price α Quanity Supplied.



⟹ Determinants of supply:-

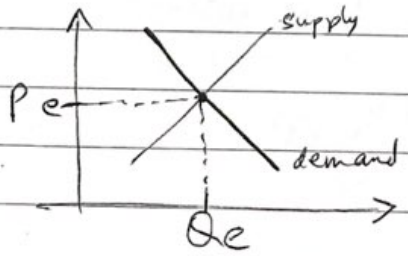
1) Price	directly proportional
2) taxes	inversely
3) cost of inputs	~~directly~~ inversely.
4) Technology	directly.
5) Culture	
6) Time	

⇒ Willingness: Final decision to accquire the goods

30-8-19

Equilibrium

→ It is the balance of forces of demands and supply.
→ It determines the incentives in the market.



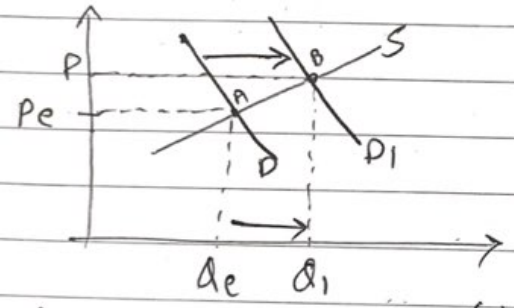
Pe = equilibrium price
Qe = equilibrium quantity.

Quantity supplied = Quantity demanded

→ Positive income change means that the demand curve moves to rightward.

→ Equilibrium point change from A to B. The new Eq. point will be between new demand and old supply.

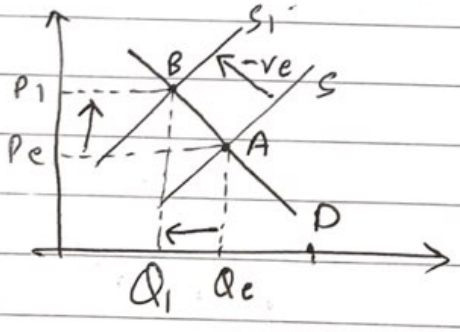
→ Change in income (+ve) leads to increase in price and quantity.



→ Assume that income changes (+ve) with the fixed supply.

Assume that taxes increase with fixed demands.

Changes in taxes:



Equilibrium

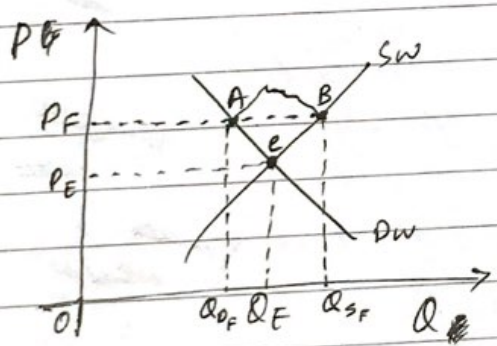
1) Price floor: (2) Price Ceiling.

↳ It is the condition in which minimum price level is regulated by the government above the market equilibrium with the promise to purchase surplus. If unsold sales below the price are prohibited.

→ **Cases:**

1) Wheat farmers: The government is trying to regulate the prices market equilibrium.

Regulate the market equilibrium :-



1) PF = price floor

2) $Q_{SF} > Q_{DF}$

Wheat surplus.

3) $0-Qe > 0-Q_{D_F}$

Previous Demand > New Demand

(4) $0-Qe < 0-Q_{SF}$

Previous Supply < New Supply.

$Q_E = Q_S = Q_D$

equilibrium, supply, demand

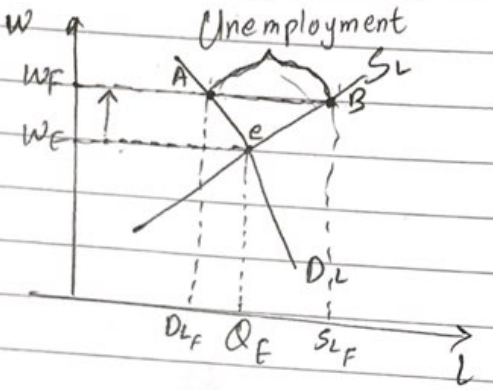
(5) Demand of wheat related products decline

(6) Household (consumers) reallocate and governmen buys surplus.

supply > demand → surplus

demand > supply → defecit

(2) Wage Floor:- Labour who do hard work.



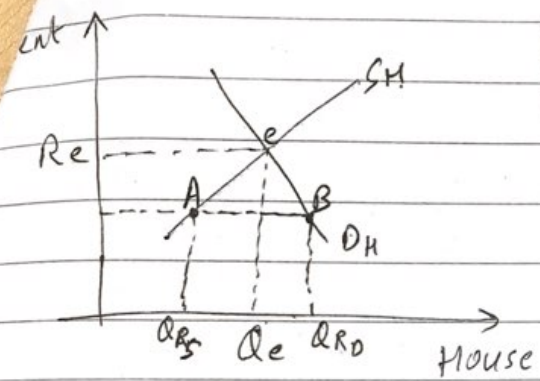
1) $S_{L_F} > D_{L_F}$
→ Labour surplus
→ Unemployment
2) Previous Demand > New demand
3) Previous Supply > New supply.

⇒ Remedies:
1) More jobs in public sector.
2) Focus on technical ~~edu~~ education.
3) To create a balance in blue collar and white collar jobs.

→ Blue collar:- ~~Office~~ ~~jobs~~ jobs done by uneducated people.
→ white collar:- office jobs

(2) Price ceiling:
It is the maximum price level determined by the government below the market equilibrium and sales above this are prohibited.

⇒ Cases:-
1) Rent control:
→ landlord (owner of any property).
→ Renter (the ~~way~~ one who pays).



Q4

$Q_D = 3000 - 10P$

$Q_S = -1000 + 10P$

(a) $Q_D = 0$

$0 = 3000 - 10P$

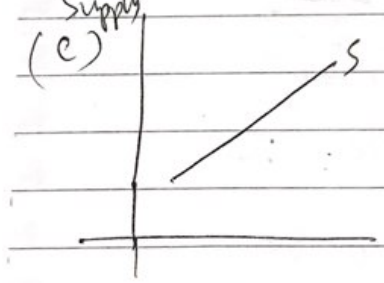
$P = 300$

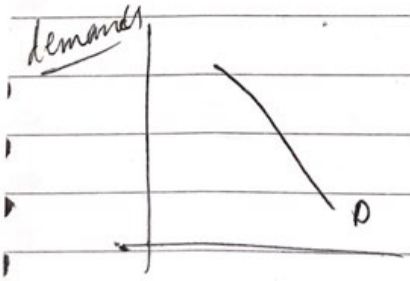
(b) $Q_S = 0$

$P = 1000/10$

$P = 10$

(c)





(d) $Q_d = Q_S$

$3000 - 10P = -1000 + 10P$

$P = 4000/20$

$P = 200$

$Q_S = 1000 = Q_D$

(e) $Q_D = 3500 - 10P$

$3500 - 10P = -1000 + 10P$

$P = 225$

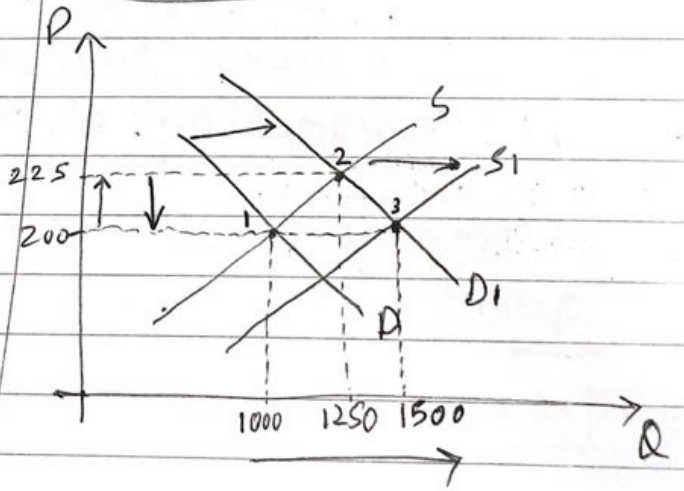
$Q_D = 1250$

(f) $Q = -500 + 10P$

$3500 - 10P = -500 + 10P$

$P = 200$

$Q_S = 1500$



11/9/18

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→ Short run → Fixed period of time where resources factors of production cannot be altered.
→ Long run → Factors of production (basic resources) can be changed.

⇒ Consumer behaviour and utility maximisation:-

→ Consumer's behaviour :-
Assumption :-
1) Rational :- Profit maximisation and utility maximisation.
2) Budget constraint :- Income (Fixed)
3) Prices: Fair idea of prices for allocation of income.
4) Prefrences :- Combination of goods and services and a set (fixed) consumption of the above.

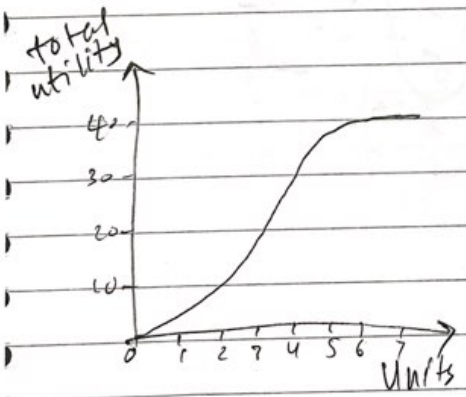
⇒ Utility is satisfaction; it can't be quantified.

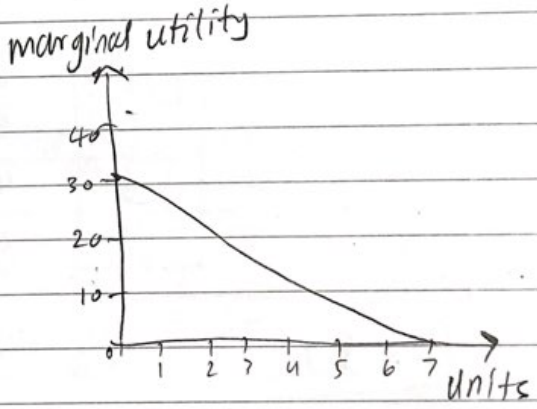
→ Total utility and marginal utility :-

⇒ Law of diminishing marginal utility:-

→ As an individual consumes more units of goods; service his total utility increases to a certain point but the marginal utility declines.

Tacos consume per meal	Total utility	Marginal Utility
0	0	0
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0
7	28	-2





Utility Maximisation Rule:

In order to maximise (rationality) satisfaction (the budget constraint) individual must Allocate his income in a manner that the last dollar spent on each good/services (preferences) yields equal utility per dollar.

↳ marginal utility (MU) / price

Q Income = $10

Product A — Product B

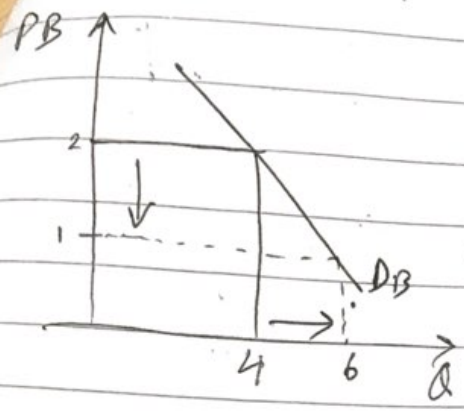
$P_A = \$1$ $P_B = \$2$

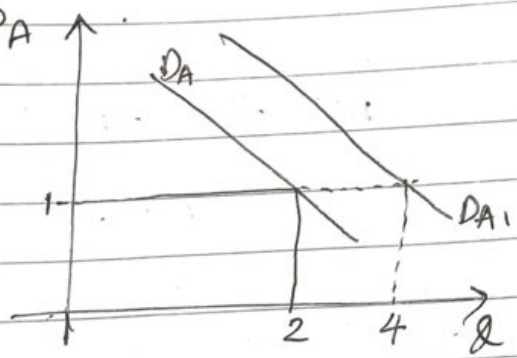
Units of product	MU_A	MU_B	MU_A/P_A	MU_B/P_B
1st	10	24	10	12
2nd	8	20	8	10
3rd	7	18	7	9
4th	6	16	6	8
5th	5	12	5	6
6th	4	6	4	3
7th	3	4	3	2

$P_A = \$1$ $P_B = \$1$

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B}$$

$$\frac{8}{1} = \frac{16}{2}$$





Problems

Q1

Let $MU_A \rightarrow z = 10 - x$ and $MU_B \rightarrow z = 21 - 2y$ where z is marginal utility per dollar in ~~Units~~ utils, x is the amount spent on A and y is the amount spend on B i-e $x + y = 10$

How is $10 best allocated between A & B And how much utility will marginal ~~utility~~ dollar yield?

$$\frac{MU_A}{P_A} = \frac{MU_B}{P_B}$$

$MU_A = MU_B = z$

$10 - x = 21 - 2y$

$-x + 2y = 21 - 10$

(i) $\rightarrow$ $-x + 2y = 11$

(ii) $\rightarrow$ $x + y = 10$

$x = 3$, $y = 7$

$\rightarrow$ $3 spent on A.

$\rightarrow$ $7 spent on B.

$MU_A \Rightarrow z = 10 - 3$

$z = 7$

(7×2)

$MU_B \Rightarrow z = 21 - 14$

$z = 7$

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Q2 Goods are X & Y income = $9 P_x = $2, P_y =
P_x fall to $1

Units of X & Y	MU_x	MU_y	MU_x/P_x	MU_y/P_y
1	10	8	5	8
2	8	7	4	7
3	6	6	3	6
4	4	5	2	5
5	3	4	3/2	4
6	2	3	1	3

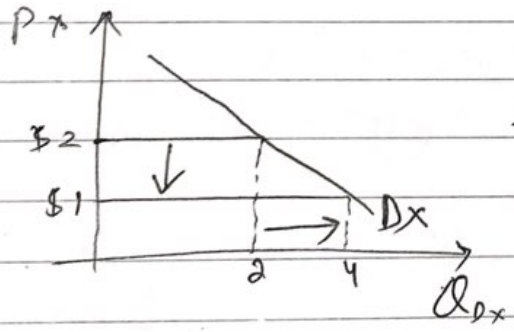
$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

$$\frac{4}{1} = \frac{4}{1}$$

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y}$$

$$\frac{8}{2} = \frac{4}{1}$$

$U = U$



graph of Good Y will remain same.

3

⇒ Price → A = $18, B = $6, C = $4, D = $24

a) How will Mr. X allocate 106 on goods A, B, C, D = ?

b) How much will X save?

U_A	MU_A	MU_B	MU_C	MU_D	No of $ saved	MU_S	$\frac{MU_A}{P_A}$	$\frac{MU_B}{P_B}$	$\frac{MU_C}{P_C}$	$\frac{MU_D}{P_D}$
1	72	24	15	36	1	5	4	4	15/4	3/2
2	84	15	12	30	2	4	3	5/2	3	5/4
3	45	12	8	24	3	3	5/2	2	2	1
4	36	9	7	18	4	2	2	3/2	7/4	3/4
5	27	7	5	13	5	1	3/2	7/6	5/4	13/24
6	18	5	4	7	6	1/2	1	5/6	1	7/24
7	15	2	3½	4	7	1/4	5/6	1/3	3/8	1/6
8	12	1	3	2	8	1/8	2/3	1/6	3/4	1/12

→ going down on the demand curve Total Utility increases, Marginal Utility decreases due to the decrease in price and increase in quantity consumed, and vice versa.

16/9/19

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Application of Utility

1) Diamond water paradox
2) cash and non cash gifts
3) Insurance policy
4) Health care
5) Storage Device disk, USB and online (storage).
6) Credit and debit cards.

(1) Diamond: jewel → status symbol
→ used less so MU↑ TU↓

(2) Water:- more important but very cheap (excess is easy).
MU↓ TU↑

(2) Cash & Non cash gifts:-
MU↓ TU↑ MU↑ TU↓

(3) Insurance Policy:-
MU↓ TU↓ after 10-15 years as policy matures → MU↑ TU↑

(4) Health care:-
public hospitals
MU↓ TU↑

private hospitals
MU↑ TU↓

(5) Storage Devices:-

Disk MU↑ TU↓
USB MU↓ TU↑
Online storage MU↓ TU↑

(6) Credit & debit cards:
MU↓ TU↑ MU↑ TU↓

⇒ Compare consumer behaviour and criminal behaviour:

Consumer	Criminal
- Price	→ irrational
- rationality	→ social cost ↑ (face by the society)
- Preference	→ marginal benefit ↓
- Budget	→ temporiarily criminal can be reach.

20-09-19

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Q1

$Q_d = a - bp$

$Q_s = -c + dp$

$Q_s = Q_d = Q_e$

$a - bp = -c + dp$

$a + c = bp + dp$

$P_E = \frac{a+c}{(b+d)}$

$Q = a - b\left(\frac{a+c}{b+d}\right)$

$Q_E = \frac{a(b+d) - ba - bc}{b+d}$

$\frac{ab + da - ba - bc}{b+d}$

$Q_E = \left| \frac{ad - bc}{b+d} \right|$

Q2

$8P_1 - 2P_2 - P_3 = 5$

$-P_1 + 8P_2 - 3P_3 = 21$

$-2P_1 - P_2 + 5P_3 = 7$

$$\begin{bmatrix} 8 & -2 & -1 & 5 \\ -1 & 8 & -3 & 21 \\ -2 & -1 & 5 & 7 \end{bmatrix}$$

$$\begin{bmatrix} -1 & 8 & -3 & 21 \\ 8 & -2 & -1 & 5 \\ -2 & -1 & 5 & 7 \end{bmatrix}$$

$R_1 \times -1$

$R_2 + -8R_1$

$2R_1 + R_2$

$$\begin{bmatrix} 1 & -8 & +3 & -21 \\ 0 & -66 & 23 & -163 \\ 0 & +17 & -1 & 49 \end{bmatrix}$$

$R_2 \times -1/66$

$17R_2 + R_3$

$$\begin{bmatrix} 1 & 8 & -3 & 21 \\ 0 & 1 & -\frac{23}{66} & \frac{163}{66} \\ 0 & 0 & \frac{325}{66} & \frac{463}{66} \end{bmatrix}$$

$R_3 \times \frac{66}{325}$

$$\begin{bmatrix} 1 & 8 & -3 & 21 \\ 0 & 1 & -\frac{23}{66} & \frac{163}{66} \\ 0 & 0 & 1 & \frac{463}{325} \end{bmatrix}$$

$P_1 + 8P_2 - 3P_3 = 21$

$P_2 - \frac{23}{66}P_3 = \frac{163}{66}$

$P_3 = \frac{463}{325}$

$$\begin{bmatrix} 1 & -8 & 3 & -21 \\ 0 & 62 & -25 & 173 \\ 0 & -17 & 11 & -35 \end{bmatrix}$$

$-8R_1 + R_2$

$2R_1 + R_3$

$$\begin{bmatrix} 1 & -8 & 3 & -21 \\ 0 & 1 & -\frac{25}{62} & \frac{173}{62} \\ 0 & 0 & -\frac{425}{62} & \frac{771}{62} \end{bmatrix}$$

$R_2 \times \frac{1}{62}$

$17R_2 + R_3$

$$\begin{bmatrix} 1 & -8 & 3 & -21 \\ 0 & 1 & -\frac{25}{62} & \frac{173}{62} \\ 0 & 0 & 1 & -\frac{771}{425} \end{bmatrix}$$

$R_3 \times -\frac{62}{425}$

$P_3 = -\frac{771}{425}$

and out

10 - $8P_1 - 2P_2 - 5 = P_3$ — (i)

i ⟶ (iii)

$-P_1 + 8P_2 - 3(-8P_1 - 2P_2 - 5) = 21$

$P_1 + 8P_2 + 24P_1 + 6P_2 + 15 = 21$

$-25P_1 + 14P_2 = 6$

i ⟶ (iii)

$-2P_1 - P_2 + 5(8P_1 - 2P_2 - 5) = 7$

$-2P_1 - P_2 + 40P_1 - 10P_2 - 25 = 7$

$38P_1 - 11P_2 = 32$.

~~$-25P_1 + 14$~~

$P_2 = \frac{25P_1 + 6}{14}$

$38P_1 - 11\left(\frac{25P_1 + 6}{14}\right) = 32$

$38P_1 - \frac{275P_1 + 66}{14} = 32$

$532P_1 - 275P_1 - 66 = 448$

$257P_1 = 514$

$P_1 = 2$

$-50 + 14P_2 = 6$

$14P_2 = 56$

$P_2 = 4$

$P_3 = 3$