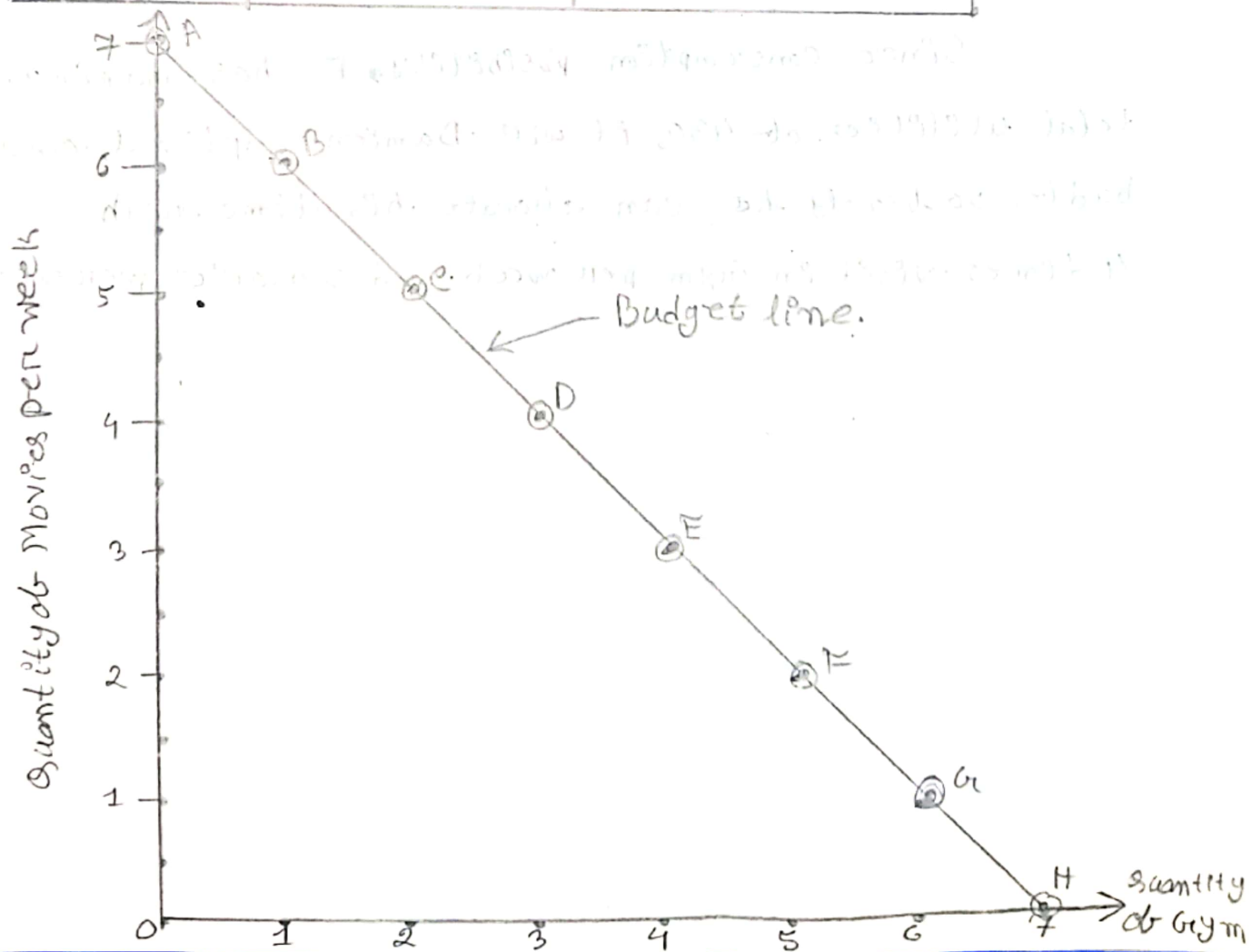Word Problem: ③   Chapter - 10

a)

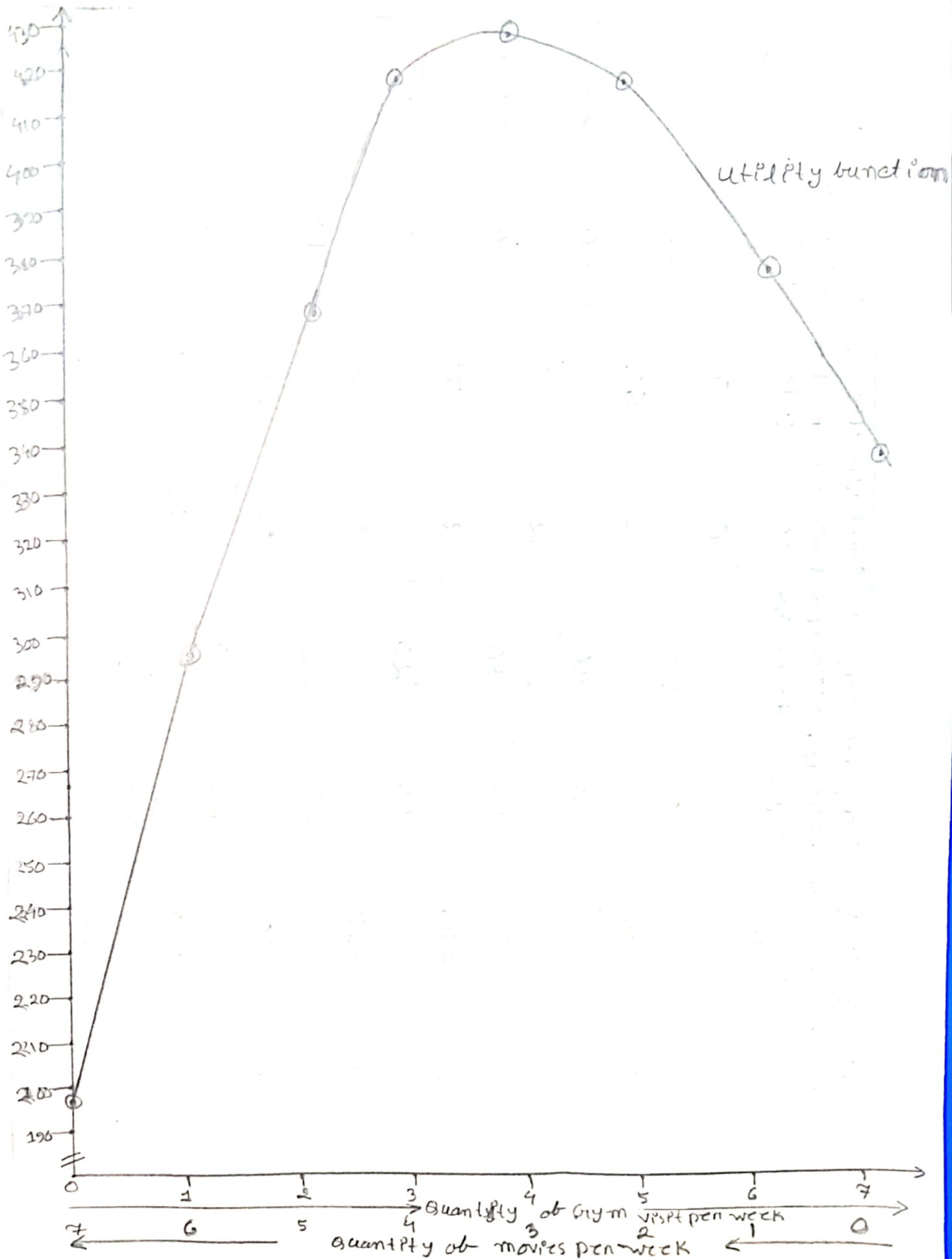| Consumption possibility	Quantity of Gym Visit per week	Quantity of Movies per week.
A	0	7
B	1	6
C	2	5
D	3	4
E	4	3
F	5	2
G	6	1
H	7	0

(b)

Quantity of Gym Visits per week.	Utility of Gym-Visits (Utils)	Quantity of Movies Per week	Utility of Movies (Utils)	Total utilits.
0	0	7	197	197
1	100	6	195	295
2	180	5	190	370
3	240	4	180	420
4	280	3	150	430
5	310	2	110	420
6	330	1	60	390
7	340	0	0	340

Since consumption posibility, E has maximum tatal utilities of 430, it will Damien's optimal consumption budle. So binaly he can allocate his time with 4 times visit in Gym per week. and 3 movies per week.

Utility function

Total Utilities →

Quantity of Gym visit per week

Quantity of movies per week

(c)

Quantity of Gym per week	Utility from Gym visits (utels)	Marginal Utility per Gym	Marginal utility per hour in Gym	Quantity of Movies per week	Utility from Movies (utels)	Marginal utility per Movie	Marginal utility per hour in movie
0	0			0	0		
1	100	100	50	1	60	66	30
2	180	80	40	2	110	50	25
3	240	60	30	3	150	46	20
4	280	46	20	4	180	30	15
5	310	30	15	5	190	10	5
6	330	20	10	6	195	5	2.5
7	340	10	5	7	197	2	1

Word Problem-03

a) Nominal GDP for 2017 = $(Q_{2017} * P_{2017})$

$$= (500 * \$4.25) + (300 * \$2.5) + (50 * \$1)$$
$$= \$(2125 + 750 + 50)$$
$$= \$2925$$

b) Base year = 2016

   Current year = 2017

   Real GDP for 2017 = $Q_{2017} * P_{2016}$

$$= (500 * \$4) + (300 * \$2) + (50 * \$0.75)$$
$$= \$2000 + \$600 + \$37.5$$
$$= \$2637.5$$

c) Base year = 2016

   Current year = 2017

From (b) Real GDP for 2017 = $2637.5

Real GDP for 2016 = $Q_{2016} * P_{2016}$

$$= (400 * \$4) + (200 * \$2) + (100 * \$0.75)$$
$$= \$1600 + \$400 + \$75$$
$$= \$2075$$

Real GDP for 2016 = \$2075

Real GDP for 2017 = \$2637.5

So, Economic Growth from 2016 to 2017:

$$\frac{Real\ GDP_{2017} - Real\ GDP_{2016}}{Real\ GDP_{2016}} \times 100$$

$$= \frac{2637.5 - 2075}{2075} \times 100$$

$$= 27.11\%$$

Word problem - 4

GDP deflator for 2017 $= \dfrac{\text{Nominal GDP}_{2017}}{\text{Real GDP}_{2017}} \times 100$

$= \dfrac{864.5 \text{ billions}}{845.5 \text{ billins}} \times 100$

$= 102.25\%$

GDP deflator for 2018 $= \dfrac{\text{Nominal GDP}_{2018}}{\text{Real GDP}_{2018}} \times 100$

$= \dfrac{882.6 \text{ billions}}{851.9 \text{ billions}} \times 100$

$= 103.6\%$

GDP deflator for 2019 $= \dfrac{\text{Nominal GDP}_{2019}}{\text{Real GDP}_{2019}} \times 100$

$= \dfrac{923.4 \text{ billions}}{875.5 \text{ billions}} \times 100$

$= 105.47\%$

from 2017 to 2019

Inflation Rate $\wedge$ using GDP Deflator $= \text{GDP Deflator}_{2019} - \text{GDP Deflator}_{2017}$

$= 105.47\% - 102.25\%$

$= 3.22\%$