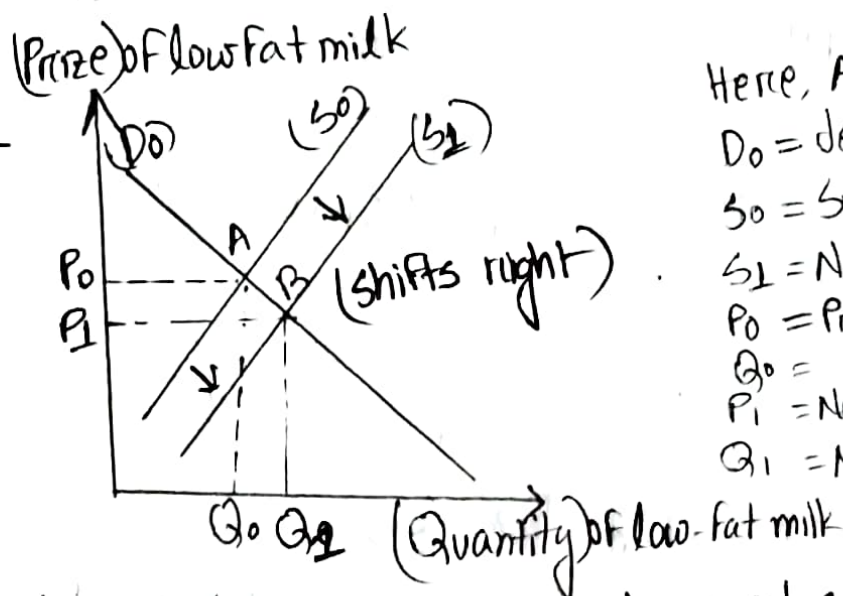Answer to the question no: 1

① The wage rate of dairy workers Falls.

1. **Effect on the supply of Low-fat Milk:**

A decrease in the wage rate of dairy workers reduces the cost of low-fat milk. Which encourages dairies to increase their production of low-fat-milk. leading to an <u>increase in the supply of low-fat milk</u>.

2. **Graph:**

Here, As Bare equilibrium Curve
D_0 = demand Curve
S_0 = Supply Curve
S_1 = New "   "
P_0 = Price for S_0.
Q_0 =   "   " S_0
P_1 = New "   " S_1
Q_1 = New "   " " S_1

Here, as a decrease in the wage rate reduce production costs, lowered the price of the production of low-fat milk and encourages increase in the quantity supplied (Q_0 to Q_1).

3. **Law of supply:** As when the wage rate drops, leads to an increase in the supply and lower costs result in a higher quantity supplied. But the reduction can increase profit-margin.

⑪ The price of cream falls.

1. Effect on the supply of low fat milk:

A decrease of price of cream reduces
dairy production cost, leding to __an increased__
__in__
__supply of low-fat milk__. As more low-fat
milk supply can be possible using the advantage
of cream price drop.

2. Graph:
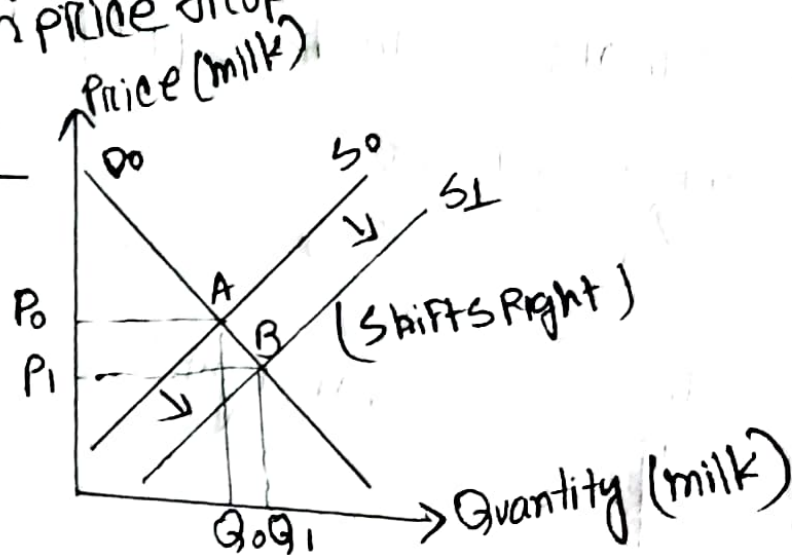
3. Law of supply: Yes.

The price of cream dropping reduces
production cost, increases the supply
of low-fat-milk and lower production
supply cost lead to greater quantity
supplied.

(iii) The price of low-fat milk Falls.

1. ~~It was~~ Effect on the supply of low-fat milk:

When the price of the low fat milk falls it reduces the profit margins for dairies. So, this might reduce the supply of low-fat milk.

2. Graph:
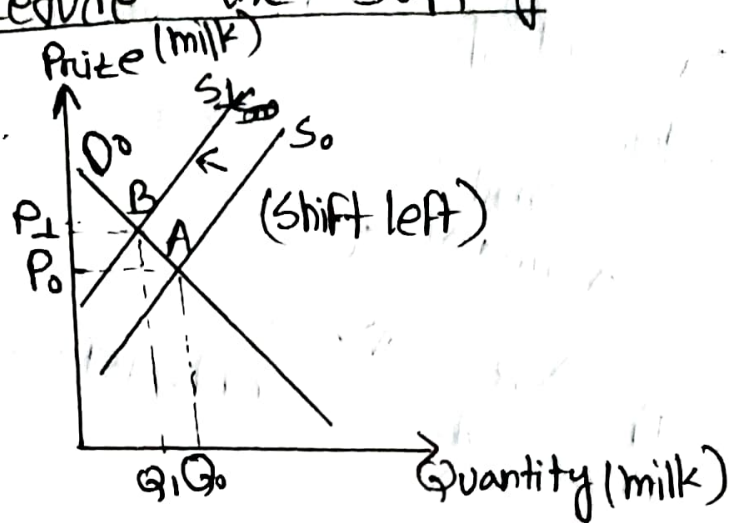
3. Law of supply: No.

As lower prices increase to an increase of supply but in this case it shows reduced prices can reduce supply due to production process.

(IV) 1. **Effect on the supply of low-fat-milk**

Dairies raising their expected price of low fat milk next year due to extended low rainfall may encourage them to reduce ~~of~~ supply, expecting better prices in the future.

2. **Graph.**
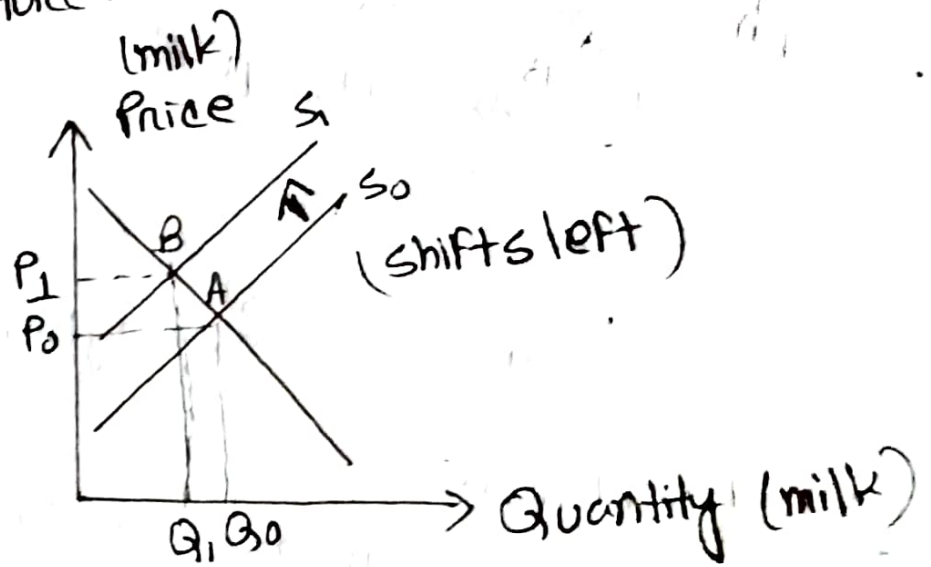
3. **Law of supply** : Yes.

This event gives the law of supply. Diaries are reducing the current supply in anticipation of higher future prices.

☑ I. Effect on the supply of low-fat milk:

The new technology lowering the cost of producing ice-cream is likely to increase the supply of low-fat milk, as more cream can be diverted to ice-cream production making it more cost-effective to produce low fat milk.

2. Graph:

Price (milk)

D_0 S_0

A S_1

↘

P_0 ----- B   (shifts right)

P_1

→ Quantity (milk)

Q_0 Q_1
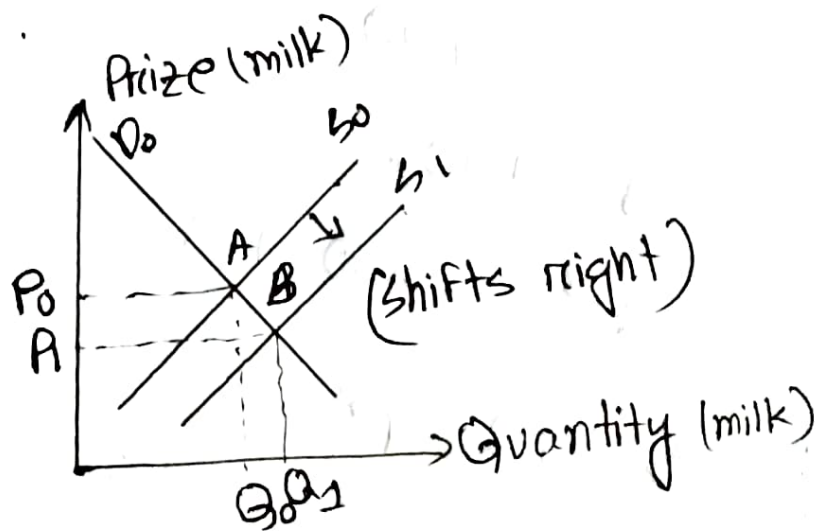
3. Law of supply: Yes, this event impacts the production of icecream. As lower the production costs typically lead to an increase in the supply.

Answer to the question no:2

Given, $P^D = 1000 - 4Q^D$ & $P^S = 300 + 3Q^S$

(a) To find the equilibrium price (P^*) & equilibrium Quantity (Q^*), substituting Q^* for Q^D & Q^S for P^* for P^D & P^S.

So, $P^* = 1000 - 4Q^*$ & $P^* = 300 + 3Q^*$

Now,
$$1000 - 4Q^* = 300 - 3Q^*$$

$$\Rightarrow 4Q^* + 3Q^* = 1000 - 300$$

$$\Rightarrow 7Q^* = 700$$

$$\therefore Q^* = 100$$

And
$$P^* = 1000 - 4(100)$$

$$\Rightarrow P^* = 1000 - 400$$

$$\therefore P^* = 600$$

Therefore, the equilibrium Price & Quantity are, $P^* = 600$ & $Q^* = 100$.
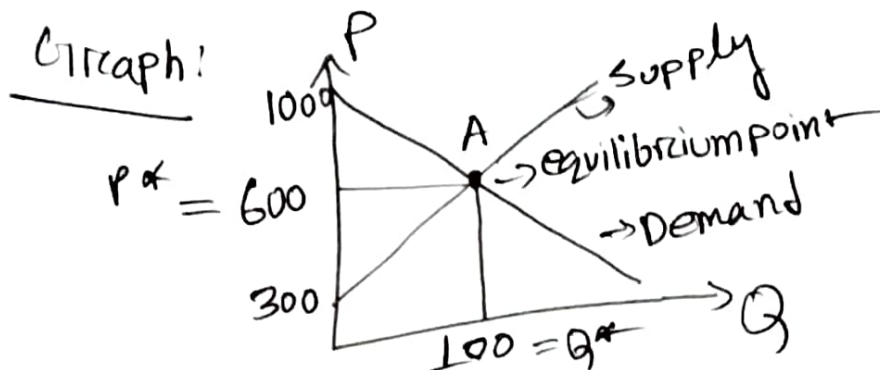
Given

~~New~~ equations,

$$P^D = 1000 - 4Q^D \quad \& \quad P^S = 300 + 3Q^S$$

From (1), $Q^* = 100$ & $P^* = 600$

Graph:

- Supply
- → equilibrium point
- → Demand
- A
- $P^* = 600$
- 1000
- 300
- $100 = Q^*$

③

New equations,

$$P^D = 1000 - 4(Q^D + 2) \quad \& \quad P^b = 300 + 3(Q^S - 3)$$

④

If, $P^S = P^D = P^*$ & $Q^S = Q^D = Q^*$

then, $1000 - 4(Q^* + 2) = 300 + 3(Q^* - 3)$
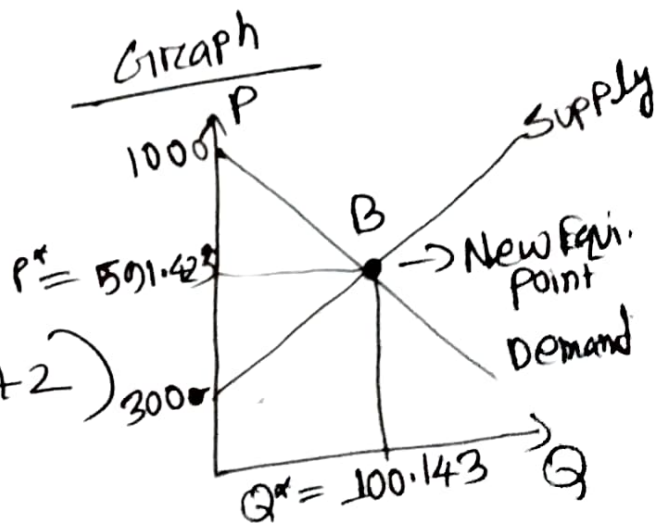
$\Rightarrow 700 = 3Q^* - 9 + 4Q^* + 8$

$\Rightarrow 700 = 7Q^* - 1$

$\Rightarrow Q^* = \dfrac{700 + 1}{7}$

$\therefore Q^* \approx 100.143$

And,

$$P^* = 1000 - 4(100.143 + 2)$$

$$= 591.429$$

Graph

- Supply
- B
- → New Equi. Point
- Demand
- $P^* = 591.428$
- 1000
- 300
- $Q^* = 100.143$

Answer to the question no: 3

(a) The Income Elasticity of Demand (IED) in this case is likely positive. An increase in consumers income leads to an increase in the quantity demanded of playbox gaming consoles, which indicates a positive relationship between income and demand. So, the positive IED values signify that as income rises, consumers tend to by more of the product.

(2)

New Demand, $1500 - 4Q^D = P^D$, Given, $P^S = 300 + 3Q^S$

So, if, $Q^D = Q^* = Q^S$

equilibrium, $1500 - 4Q^* = 300 + 3Q^*$

$\Rightarrow 3Q^* + 4Q^* = 1500 - 300$

$\Rightarrow \boxed{7Q^* = 1200}$

$\therefore \boxed{Q^* = 171.428}$

$\& P^* = 1500 - 4 \times (171.428)$

$\boxed{P^* = 814.28}$

Old equilibrium, $1000 - 4Q^* = 300 + 3Q^*$

$\Rightarrow \boxed{700 = 7Q^*}$

So, $Q^* = 100$ $\quad \& P^* = 600$ [From 2(1)]

Percentage change in income

$\dfrac{1500 - 1000}{\dfrac{1500 + 1000}{2}} \times 100 = 40\%$

$\therefore IED = \dfrac{52.632}{40} \approx 1.315$

$\therefore IED$ is positive.

percentage change in demand,

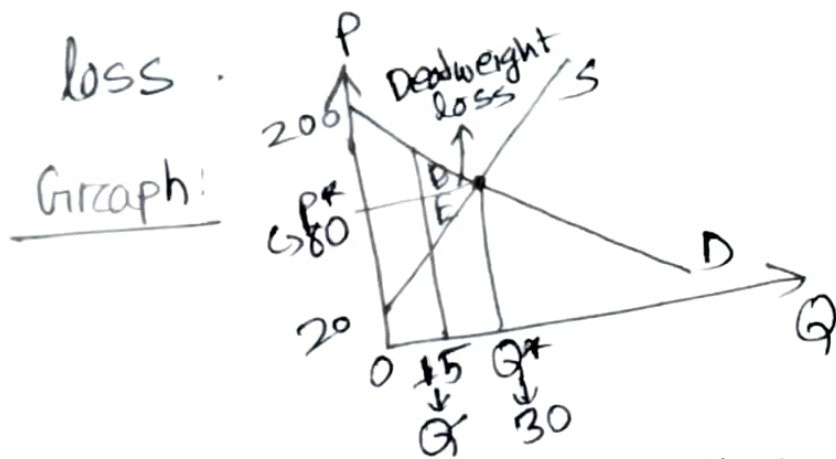$\dfrac{1200 - 700}{\dfrac{1200 + 700}{2}} \times 100 \approx 52.632\%$

which is > 1 & < 0.

If there is under production quality supplied is less than the equilibrium quality then the value will decrease in total surplus.

So, Total TS $= 1800 + 900 = 2700$

Now, if we make the quantity smaller $Q^* = 30$ to $Q^* = 15$ then there will be a deadweight loss.

Graph:

And under production will be seen with deadweight loss & this will cause the loss in total surpluss.

Hence, At equilibrium point,

$$CS = A + D \quad \& \quad PS = B + E$$

After under production, $CS = A$ & $PS = B$

Therefore, Dead weight loss $= D + E$ Ans

Answer to the question no. 4

①

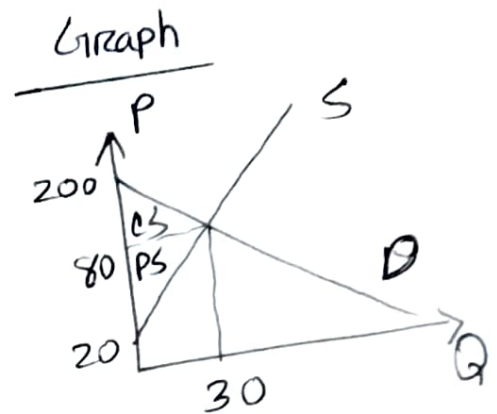Given, $P^D = 200 - 4Q^D$ & $P^S = 20 + 2Q^S$

In equilibrium, if $P^D = P^S = P^*$ & $Q^D = Q^S = Q^*$

then, $200 - 4Q^* = 20 + 2Q^*$

$\Rightarrow 6Q^* = 180$

$\therefore Q^* = 30$

And $P^* = 200 - (4 \times 30)$

$= 80$

Graph

Consumer supplies, $CS = \frac{1}{2} \times b \times h$

$= \frac{1}{2} \times (200 - 80) \times 30$
$\qquad\qquad \hookrightarrow \text{from graph}$

$= \boxed{1800}$ Ans

Producer supplies, $PS = \frac{1}{2} \times b \times h$

$= \frac{1}{2} \times b \times h$

$= \frac{1}{2} \times 60 \times 30$
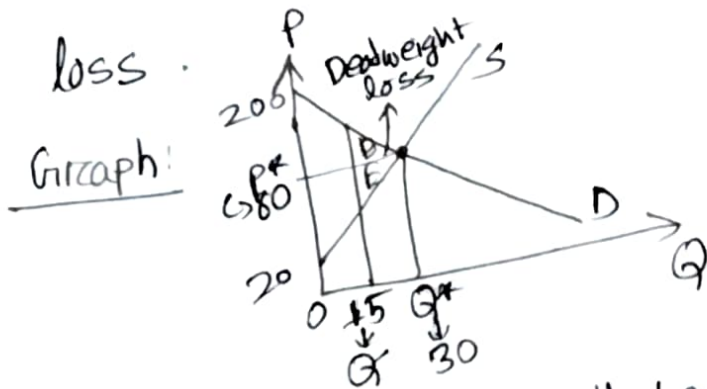
$= \boxed{900}$ Ans

②

In question (1) we can observe the equilibrium price $P^* = 80$ & as it is equilibrium price the consumer surplus remains the same as calculated before (1), which is 1800. So, it is the it is the same compared to the consumer surplus (1).

Ans

If there is under production quality supplied is less than the equilibrium quality then the value will decrease in total surplus.

So, Total TS $= 1800 + 900 = 2700$

Now, if we make the quantity smaller $Q^* = 30$ to $Q^* = 15$ then there will be a deadweight loss.

Graph:

And under production will be seen with deadweight loss & this will cause the loss in total surplus.

Here, At equilibrium point,
$$CS = A + D \quad \& \quad PS = B + E$$

After under production, $CS = A \quad \& \quad PS = B$

Therefore, Deadweight loss $= D + E$ $\quad$ Ans