Question 1 If he gives up 8 sodas he gets 4 pizzas. Thus, he get 2 sodas per pizza. Therefore,

the price of a soda is 3 Dollars

Question 2 For two units of good 1 she can acquire 1 unit of good 2. Therefore,

She can afford 10 units of good 2

Question 3

- (0, 16),
- (2, 10),
- (7, 3),
- (16, 0),

Graph the indifference curve in the grid below and shade that set of all consumption choices that are strictly better than (4, 4).

Question 4 The partial derivatives are given by 1 and $2/\sqrt{x^2}$. The MRS is therefore $-\sqrt{x^2}/2$. Therefore,

$\text{MRS}(16, 4) = -1$
Question 5 If \( x_2 = 10 \) then \( x_1 = 30 \). Therefore, the income is \( 30p_1 + 10p_2 \), i.e.,

\[
m = 300
\]

Question 6 The optimal choice is interior. Therefore, \( p_1/p_2 = 4 \).

\[
p_2 = 3
\]

Question 7 Again, the optimal choice is interior. Therefore,

\[
\text{MRS}(3, 7) = -\frac{5}{3}
\]

Question 8

![Graph showing the demand for goods 1 and 2 with changes in demand](image)

**demand for good 1 changes by \(-2\) unit**

**demand for good 2 changes by \(-4\) units**

Question 9 At the optimal choice \( \text{MRS}(x_1, x_2) = -\frac{4}{x_1+x_2+2} = -\frac{4}{7} \), which implies \( 8 = x_1 + x_2 + 2 \), i.e., \( x_1 + x_2 = 6 \). The budget line equation is \( x_1 + 2x_2 = 11 \). Therefore,

\[
x_1 = 1 \quad x_2 = 5
\]
Question 10

At the optimal choice \( x_1 = 12 \) \( x_2 = 4 \)

good 2

Question 11

The MRS is \(-20+2h\). If the price of an hour of calls is 6 then \(20-2h = 6\). Therefore \( h = 7 \).

The utility of not signing up is \( u(0, 1000) = 1,000 \). For hours of calls the person pays 42 Dollars. In addition he/she pays \( F \). Therefore, \( u(7, 1000 - 42 - F) = 1,000 \), i.e., \( 1,049 - F = 1,000 \). Therefore, \( F \) can be at most 49.

If the consumer signs up, he/she will call \( h = 7 \) hours

The company will select \( F = 49 \) as fixed fee
Question 12

good 2