Question 1

1. Given the following model:

   $Y = C + I_0 + G_0$

   $C = a + b(Y - T) \qquad (a > 0, \quad 0 < b < 1) \qquad$ [T: taxes]

   $T = d + tY \qquad (d > 0, \quad 0 < t < 1) \qquad$ [t: income tax rate]

   (*a*) How many endogenous variables are there?

   (*b*) Find Y^*, T^*, and C^*.

2. Let the national-income model be:

   $Y = C + I_0 + G$

   $C = a - b(Y - T_0) \qquad (a > 0, \quad 0 < b < 1)$

   $G = gY \qquad (0 < g < 1)$

   (*a*) Identify the endogenous variables.

   (*b*) Give the economic meaning of the parameter g.

   (*c*) Find the equilibrium national income.

   (*d*) What restriction on the parameters is needed for a solution to exist?

3. Find Y^* and C^* from the following:

   $Y = C + I_0 + G_0$

   $C = 25 + 6Y^{1/2}$

   $I_0 = 16$

   $G_0 = 14$

Question 2

Suppose, $I = \$70$; $C = \$60 + 0.80\,Yd$ and $Yd = Y$.

(a) Find equilibrium output.

(b) Find equilibrium output when there is a \$10 increase in autonomous investment (investment increases from \$70 to \$80).

(c) Establish the multiplier effect of the \$10 increase in autonomous spending.

Question 3: Measure National Income Using the Product Method

An economy has the following industries involved in the production of goods and services. Use the data below to calculate **National Income** using the Product Method.

Industry	Gross Output ($)	Intermediate Consumption ($)	Value Added ($)
Orange Farmers	150	0	?
Juice Producers	300	150	?
Packaging Industry	100	50	?
Retailers	200	100	?

Additional Information:

1. Depreciation: $20
2. Indirect Taxes: $30
3. Subsidies: $10

Question4

a) If P=\$10 at the point on the D curve where e =0.5, MR is (a) \$5, (b) \$0, (c) 2\$1, or (d) 2\$10

b) A monopolist faces a demand curve, P = 100 – 2Q. If marginal cost is constant and is equal to 20. What is the amount of profits made by the monopolist ?

c)A monopolist has the following total cost function TC = 10 + 5Q

If the price elasticity of demand for his products is – 2, find out price he will fix for his product.

If the price elasticity of demand for his product changes to –4, how will he change his price ?