

**GONVILLE AND CAIUS COLLEGE
ECONOMICS MATHS ASSESSMENT**

SAMPLE

Please answer the following two maths questions. You have 30 minutes in total.

(1)

Suppose that the supply and demand functions in a market are:

$$Q_s = 6P - 10$$

$$Q_d = 100 - 5P$$

(where Q_s is quantity supplied as a function of price (P) and Q_d is quantity demanded as a function of the price (P)).

Find the ‘equilibrium’ price and quantity in the market. What would happen if the state imposed a maximum price of 5?

(2)

Suppose the aggregate consumption function for an economy is $C = 10 + Y^{0.5}$

(where C is aggregate consumption and Y is aggregate income)

- (a) Roughly sketch the consumption function
- (b) Find an expression for the average propensity to consume (hint: find C/Y).
- (c) Find the first and second derivatives of the aggregate consumption function with respect to Y (hint: differentiate with respect to Y).
- (d) Noting that we can think of the “marginal propensity to consume” as being the first derivative, briefly comment on what happens to this “marginal propensity to consume” as Y increases? (hint: does it increase, decrease or stay the same?)
- (e) Relate your answer to (d) to the sketch in (a).

END OF QUESTIONS