Exercises

2.2.1 Judy has an income of 10 which she spends on fish and chips, the prices of which are 2 and 3 respectively. Sketch the budget set.

Also sketch the budget set if the prices of the two goods are reversed.

2.2.2 Henry has an income of 18 which he can spend on two goods labelled 1 and 2, with prices 1 and 3 respectively. Sketch the budget set.

Sketch also the budget set in each of the following cases:

(a) income 36, prices 2 and 6;

(b) income 90, prices 5 and 15;

(c) income 9, prices 0.5 and 1.5.

What do you notice? Can you formulate a general result?

2.2.3 A firm produces two products X and Y, using a production process involving two departments A and B. The time in minutes required in each department per unit output of each product is given by the following table.

	Department	
	A	B
Product X	16	10
Product Y	8	20

Department A is available for 4 hours per day and department B is available for 5 hours per day. Sketch the feasible set.

2.2.4 Suppose the situation is as in Exercise 2.2.3, but with the additional information that production per unit of X and Y causes the emission of 2 and 3 units of carbon respectively. Sketch the feasible set if total carbon emissions are to be restricted to 48 units per day.

Sketch also the feasible set if total carbon emissions per day are to be restricted to (a) 60 units, (b) 24 units.