National 5 Homework – Relationships

WORKING with SIMULTANEOUS EQUATIONS

1.	Two lines have equations $2x + 3y = 12$	and $x + y = 5$.	
	By drawing graphs of the two lines, find the point of intersection of the 2 lines.		(3)
2.	Solve, by substitution, the equations	$3a + 1 \cdot 2b = 14 \cdot 4$	
		a = 0.5b + 3	(4)
3.	Solve, by elimination, the equations	3p - 2q = 4	
		p - 3q = 13	(3)

Mr. Martini is ordering tea and coffee for his cafe. He spends exactly £108 on these each month.
In March he orders 4kg of tea and 6kg of coffee. In April he changes his order to 8kg of tea and 3 kg of coffee.

How much do the tea and coffee cost each per kilogram? (6)

5. An electrical goods warehouse charges a fixed price per item for goods delivered plus a fixed rate per mile.

The total cost to a customer 40 miles from the warehouse for the delivery of 5 items was \pounds 30.

A customer who lived 100 miles away paid £54 for the delivery of 2 items.

Find the cost to a customer who bought 3 items and lives 70 miles away. (5)

6. A straight line with equation y = ax + b passes through the points (2, 4) and (-2, -2). Find the equation of the line.

25 marks

(4)