  
HIGHER: SIMULTANEOUS EQUATIONS – This is a selection of the types of question that you need to be able to solve.

**Q1. NON-CALCULATOR**

Solve the simultaneous equations

3*x* + 2*y* = 4  
4*x* + 5*y* = 17

*x* ...........................................................

*y* ...........................................................

**(Total for Question is 4 marks)**

**Q2.** Solve the simultaneous equations

5*x* + 2*y* = −2   
3*x* − 5*y* = 11.2

*x* = ..........................................................

*y* = ...........................................................

**(Total for question = 4 marks)**

**Q3.**The Singh family and the Peterson family go to the cinema.

The Singh family buy 2 adult tickets and 3 child tickets.   
They pay £28.20 for the tickets.

The Peterson family buy 3 adult tickets and 5 child tickets.   
They pay £44.75 for the tickets.

Find the cost of each adult ticket and each child ticket.

**(Total for question = 5 marks)**

**Q4.**Susie has to deliver some packages and some parcels.

The total number of packages is 4 times the number of parcels.  
The total number of packages and parcels is 40

Each parcel has a weight of 1.5 kg.  
The total weight of the packages and parcels is 37.6 kg.

Each of the packages has the same weight.

Work out the weight of each package.

. . . . . . . . . . . . . . . . . . . . . . kg

**(Total for Question is 4 marks)**

**Q5.  
A** and **B** are straight lines.

Line **A** has equation 2*y* = 3*x* + 8

Line **B** goes through the points (−1, 2) and (2, 8)

Do lines **A** and **B** intersect?

You must show all your working.

**(Total for Question is 3 marks)**

**Q6.**

Solve algebraically the simultaneous equations

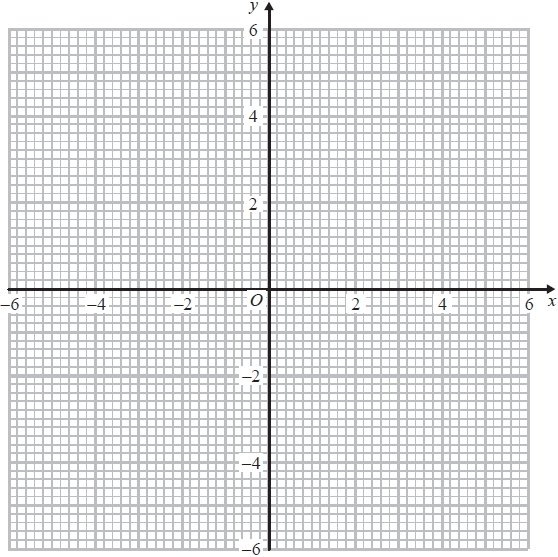
*x*2 + *y*2 = 25   
*y* − 3*x* = 13

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**(Total for question = 5 marks)**

**Q7.**

(a)  On the grid, construct the graph of *x*2 + *y*2 = 16



**(2)**

(b)  Find estimates for the solutions of the simultaneous equations

*x*2 + *y*2 = 16   
           *y* = 2*x* + 1

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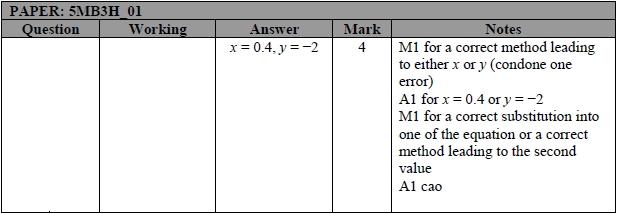
**(3)**

**(Total for question = 5 marks)**

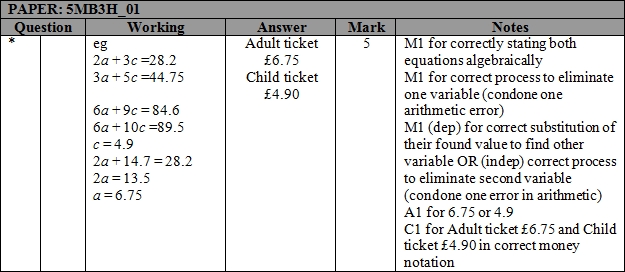
**Mark Scheme**  
Q1.



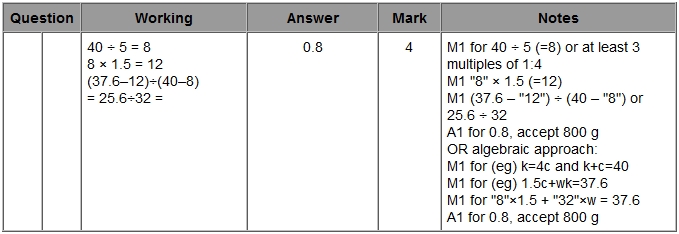
**Q2.**



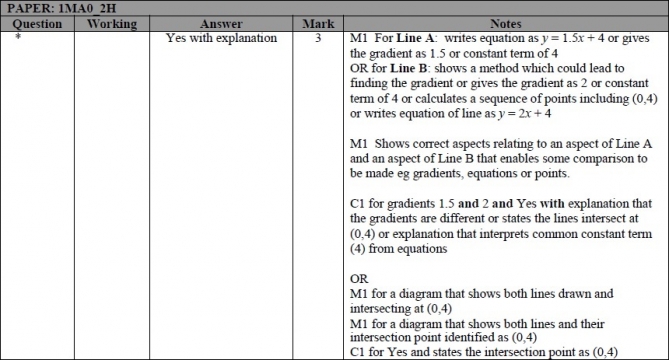
**Q3.**



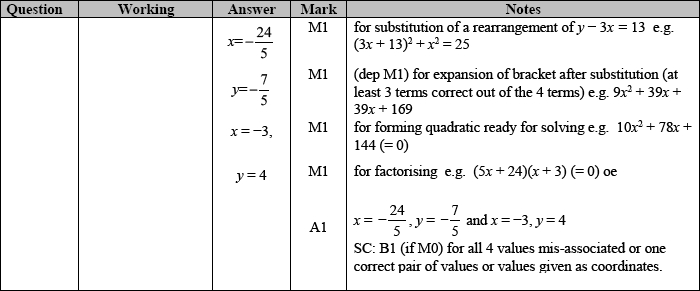
**Q4.**



**Q5.**



**Q6.**



**Q7.**

