A picture containing drawing

Description automatically generated**Parallel and Perpendicular Graphs Extension Task**

**1.** Here are five graphs labelled **A**, **B**, **C**, **D** and **E**.



Each of the equations in the table represents one of the graphs **A** to **E**.

Write the letter of each graph in the correct place in the table.

|  |  |
| --- | --- |
| **Equation** | **Graph** |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

(Total 3 marks)

**3.** Find the gradient of the straight line with equation .

……………………

(Total 2 marks)

**4.**



Diagram **NOT** accurately drawn

*A* is the point (0, 1)  
*B* is the point (10, 6)

(a) Find the coordinates of the midpoint of *AB*.

(................... , ...................)

(2)

The equation of the straight line through *A* and *B* is

(b) Write down the equation of another straight line that is parallel to

.........................................

(1)

(c) Write down the equation of another straight line that passes through the point (0, 1)

.........................................

(1)

(Total 4 marks)

**5.** A straight line, **L**, passes through the point with coordinates (4, 7) and is perpendicular to the line with equation .

Find an equation of the straight line **L**.

………………………………

(Total 3 marks)

**6.**



*ABCD* is a rectangle.  
*A* is the point (0, 1).  
*C* is the point (0, 6).

The equation of the straight line through *A* and *B* is

(a) Find the equation of the straight line through *D* and *C*.

.................................

(2)

(b) Find the equation of the straight line through *B* and *C*.

.................................

(2)

(c) It is always possible to draw a circle which passes through all four vertices of a rectangle.  
Explain why.

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(1)

(Total 5 marks)