**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** |
| $$x+y=5$$ |  |
| $$y=x-5$$ |  |
| $$y=-5-x$$ |  |
| $$y=-5$$ |  |
| $$x=-5$$ |  |

(Total 3 marks)

**3.** Find the gradient of the straight line with equation $5y=3-2x$.

……………………

(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 $y=\frac{1}{2}x+1$

(b) Write down the equation of another straight line that is parallel to $y=\frac{1}{2}x+1$

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(1)

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

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(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 $y=2x+3$.

 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 $y=2x+1$

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

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(2)

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

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(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)