# Foundation Check In - 7.02 Straight line graphs

1. Sketch the graph of  on the grid.
2. The point (*p*, 0) lies on the line with equation . Write down the value of *p*.
3. Which of the following lines are parallel to ?

   

1. A straight line has gradient 2 and passes through the point (0, 5). Write down the equation of the line parallel to this line which passes through the point (-1, -3).
2. What is the *y*-intercept of the straight line that passes through the point (5, 12) and cuts the *x*-axis at 1?
3. Alison says that the line  is parallel to the line . Explain why Alison is wrong.
4. The line with equation  passes through the point (6, 13). Show that the equation of the line is .
5. A straight line passes through the points (1, 8) and (5, 4). Show that the *y*-coordinate of the point on the line when  is 12.
6. The line passing through the points (-1, 4) and (5, *w*) is parallel to .

Find the value of *w*.

1. A regular hexagon is drawn on a coordinate grid so that every vertex is the same distance from the origin. Two vertices are marked at (0, 4) and (0, -4).

Find the equations of the six straight lines that would intersect to make this hexagon.

**Extension**

Match up the following equations with their sketch graphs marking any *x*- and *y*-intercepts on the graphs.

**A:**  **B:**  **C:** 

**D:**  **E:**  **F:** 

|  |  |
| --- | --- |
| **1**.*y**x*O | **2.** O*x**y* |
| **3.***y**x*O | **4**. O*x**y* |
| **5**.*y*O*x* | **6.** O*y**x* |

## Answers

**

1. 
2. Gradient  so the parallel lines are  and .
3. **
4. Gradient  so . Substituting one of the coordinates and solving gives .
5. The line  has gradient 2 whereas the line  has gradient -2. Parallel lines must have the same gradient so Alison is wrong.
6. **

When  and , 

 

  therefore the equation is 

1. The gradient of the line is  so the equation of the line is .

If the line goes through (1, 8), when **,  so 

 

The equation is  so when , 

1. **
2. , , , , , 

**Extension**

**A:**  is graph 4 **B:**  is graph 5 **C:**  is graph 2

(0, -3) and  (0, -3) and (6, 0) (0, 5) and 

**D:**  is graph 3 **E:**  is graph 6 **F:**  is graph 1

(0, 5) and  (0, 6) and (2, 0) (0, 5) and (5, 0)

, , , , , 

**OCR Resources**: *the small print*OCR’s resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources. We update our resources on a regular basis, so please check the OCR website to ensure you have the most up to date version. This formative assessment resource has been produced as part of our free GCSE teaching and learning support package. All the GCSE teaching and learning resources, including delivery guides, topic exploration packs, lesson elements and more are available on the qualification webpages. If you are looking for examination practice materials, you can find Sample Assessment Materials (SAMs) on the qualification webpage [here](http://www.ocr.org.uk/qualifications/gcse-mathematics-j560-from-2015/delivery-guide/delivery-guide-gmdg009-section-09-congruence-and-similarity/).
© OCR 2016 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content: n/a

Please get in touch if you want to discuss the accessibility of resources we offer to support delivery of our qualifications: resources.feedback@ocr.org.uk

We’d like to know your view on the resources we produce. By clicking on ‘Like’ or ‘Dislike’ you can help us to ensure that our resources work for you. When the email template pops up please add additional comments if you wish and then just click ‘Send’. Thank you.

If you do not currently offer this OCR qualification but would like to do so, please complete the Expression of Interest Form which can be found here: [www.ocr.org.uk/expression-of-interest](http://www.ocr.org.uk/expression-of-interest)

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

**OCR Resources**: *the small print*OCR’s resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.
© OCR 2014 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

**OCR Resources**: *the small print*OCR’s resources are provided to support the teaching of OCR specifications, but in no way constitute an endorsed teaching method that is required by the Board, and the decision to use them lies with the individual teacher. Whilst every effort is made to ensure the accuracy of the content, OCR cannot be held responsible for any errors or omissions within these resources.
© OCR 2014 - This resource may be freely copied and distributed, as long as the OCR logo and this message remain intact and OCR is acknowledged as the originator of this work.

OCR acknowledges the use of the following content::
⚫ Garden: Elen Eliseeva/Shutterstock.com ⚫ Flag: Pixel Europe/Shutterstock.com

To give us feedback on, or ideas about the OCR resources you have used, email resourcesfeedback@ocr.org.uk

| **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |  | **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| AO1 | 1 | Sketch an equation of a straight line |  |  |  |  | AO1 | 1 | Sketch an equation of a straight line |  |  |  |
| AO1 | 2 | Find the intercept of a straight line using  |  |  |  |  | AO1 | 2 | Find the intercept of a straight line using  |  |  |  |
| AO1 | 3 | Identify equations of parallel lines |  |  |  |  | AO1 | 3 | Identify equations of parallel lines |  |  |  |
| AO1 | 4 | Find the equation of a parallel line given the gradient and a point on the line |  |  |  |  | AO1 | 4 | Find the equation of a parallel line given the gradient and a point on the line |  |  |  |
| AO1 | 5 | Find the *y*-intercept of a straight line that passes through two given points |  |  |  |  | AO1 | 5 | Find the *y*-intercept of a straight line that passes through two given points |  |  |  |
| AO2 | 6 | Apply knowledge of equations of parallel lines |  |  |  |  | AO2 | 6 | Apply knowledge of equations of parallel lines |  |  |  |
| AO2 | 7 | Find the equation of a straight line using  and a point on the line |  |  |  |  | AO2 | 7 | Find the equation of a straight line using  and a point on the line |  |  |  |
| AO2 | 8 | Find a *y*-coordinate of a point on a straight line that passes through two given points |  |  |  |  | AO2 | 8 | Find a *y*-coordinate of a point on a straight line that passes through two given points |  |  |  |
| AO3 | 9 | Solve a problem involving the equation of a straight line that passes through two given points |  |  |  |  | AO3 | 9 | Solve a problem involving the equation of a straight line that passes through two given points |  |  |  |
| AO3 | 10 | Solve a geometric problem by identifying equations of lines |  |  |  |  | AO3 | 10 | Solve a geometric problem by identifying equations of lines |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
| **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |  | **Assessment Objective** | **Qu.** | **Topic** | **R** | **A** | **G** |
| AO1 | 1 | Sketch an equation of a straight line |  |  |  |  | AO1 | 1 | Sketch an equation of a straight line |  |  |  |
| AO1 | 2 | Find the intercept of a straight line using  |  |  |  |  | AO1 | 2 | Find the intercept of a straight line using  |  |  |  |
| AO1 | 3 | Identify equations of parallel lines |  |  |  |  | AO1 | 3 | Identify equations of parallel lines |  |  |  |
| AO1 | 4 | Find the equation of a parallel line given the gradient and a point on the line |  |  |  |  | AO1 | 4 | Find the equation of a parallel line given the gradient and a point on the line |  |  |  |
| AO1 | 5 | Find the *y*-intercept of a straight line that passes through two given points |  |  |  |  | AO1 | 5 | Find the *y*-intercept of a straight line that passes through two given points |  |  |  |
| AO2 | 6 | Apply knowledge of equations of parallel lines |  |  |  |  | AO2 | 6 | Apply knowledge of equations of parallel lines |  |  |  |
| AO2 | 7 | Find the equation of a straight line using  and a point on the line |  |  |  |  | AO2 | 7 | Find the equation of a straight line using  and a point on the line |  |  |  |
| AO2 | 8 | Find a *y*-coordinate of a point on a straight line that passes through two given points |  |  |  |  | AO2 | 8 | Find a *y*-coordinate of a point on a straight line that passes through two given points |  |  |  |
| AO3 | 9 | Solve a problem involving the equation of a straight line that passes through two given points |  |  |  |  | AO3 | 9 | Solve a problem involving the equation of a straight line that passes through two given points |  |  |  |
| AO3 | 10 | Solve a geometric problem by identifying equations of lines |  |  |  |  | AO3 | 10 | Solve a geometric problem by identifying equations of lines |  |  |  |