**Sequences, functions and graphs (H)**

Pre-Intervention Assessment

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **Question** | **Objective** | **RAG** |
| 1 | Recognise parallel graphs using their gradients |  |
| 2 | Sketch quadratic, cubic and reciprocal graphs |  |
| 3 | Recognise and interpret the equation of a circle |  |
| 4 | Recognise transformations of graphs |  |
| 5 | Calculate the nth term of a quadratic sequence |  |

**1.** Which of the following graphs are parallel? Circle the 2 you have chosen.

y = 2x + 1 y = ¼x +1 y = 2x + 4 y = 4x - 1

Explain your reasoning.

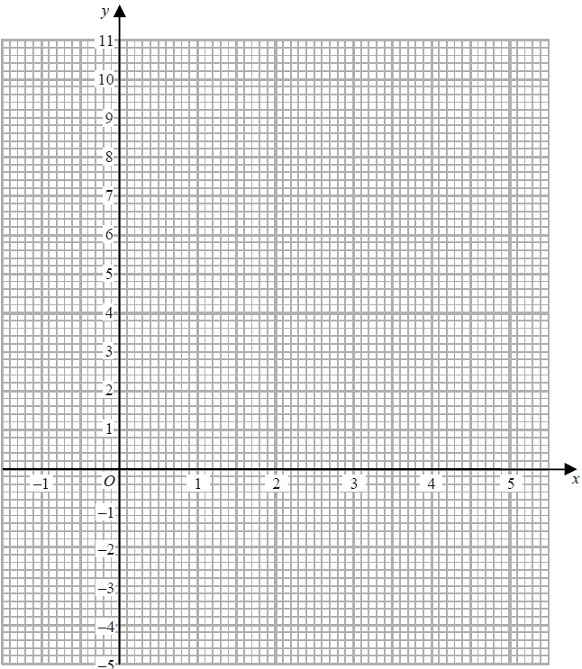
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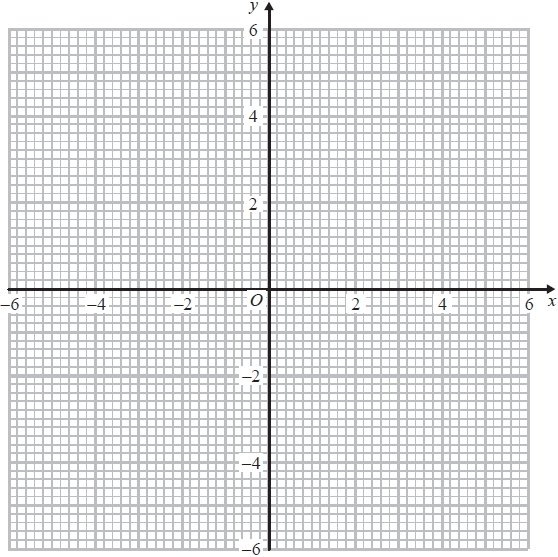
**2.** (a)   Complete the table of values for *y* = *x*2 − 5*x* + 3

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **x** | -1 | 0 | 1 | 2 | 3 | 4 | 5 |
| **y** |  | 3 | -1 |  | -3 |  | 3 |

**(b)**   On the grid below, draw the graph of *y* = *x*2 − 5*x* + 3



**3.** On the grid, construct the graph of *x*2 + *y*2 = 16



**4.** Here are the first 5 terms of a quadratic sequence.

1           3            7           13           21

Find an expression, in terms of *n*, for the *n*th term of this quadratic sequence.

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[Glue here]