

Card Sort ($y=mx+c$, etc)

Introduction

This group activity was used in an extended plenary session at the end of three lessons on graphing functions.

The objectives for the three lessons were:

- A. To be able to write down the equation of 'simple' straight lines by finding a relationship between the x and y co-ordinates.
- B. To understand that all straight lines can be written in the form $y=mx+c$ and explain what m and c represent.
- C. To be able to draw straight line graphs of the form $ax+by=c$

The Activity

Pupils are asked to work in groups of three or four to match the graph of the function with its corresponding equation. Each group is expected to justify their responses by using the table to record their answers. A list of possible key vocabulary is included to prompt pupils. The equations have been expressed in a form so there are no 'obvious' matches. Also, the number '3' is included in every equation to make the matching more difficult.

Key questions:

- What strategy did you use to match them?
- What were the clues?
- Which were easy to match? Why? Which were difficult?

In the final part of the activity, the different groups would be allocated a graph and then asked to present their reasons for the choice they have made.

Possible Variations

- Remove two cards - one graph and one equation. The two cards should not form a matching pair.
- Include additional cards, e.g.
 - a set of co-ordinates that matches a given graph and equations,
 - further examples of equations of straight lines not expressed in the form $y=mx+c$ and their corresponding graphs.
 - include examples of quadratics of the form $y=ax^2+b$

Equations of 'simple' functions: Card Sort Activity

$$y = x + 3$$

$$x + y = 3$$

$$y = 2x - 3$$

$$y = 3x$$

$$y = \frac{1}{2}x + 3$$

$$y = x^2 + 3$$

$$x = 3$$

$$y = 3$$

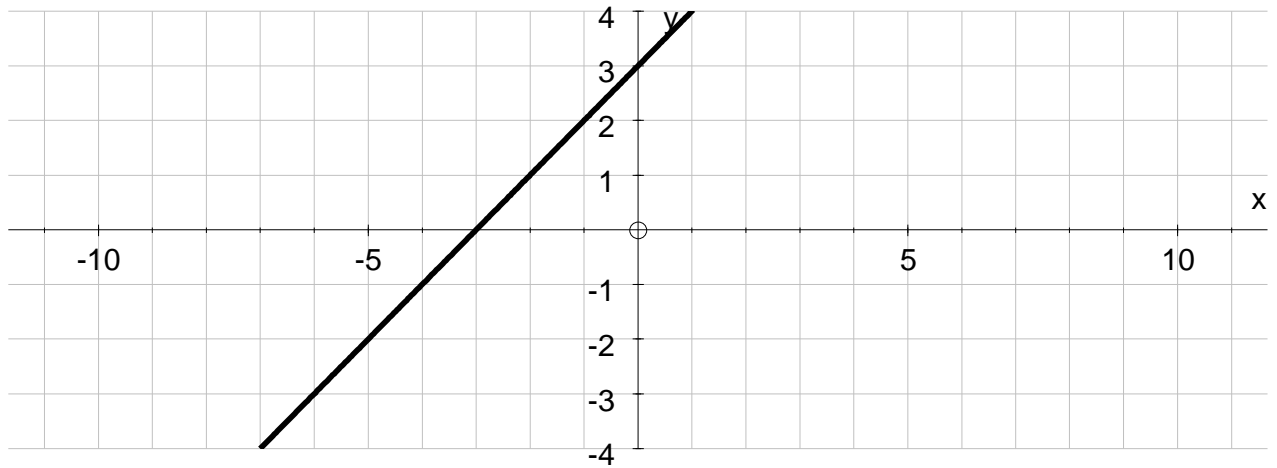
$$3x + 4y = 12$$

The line
parallel to
 $y = 2x + 1$ and
passing
through the
point $(0, 3)$

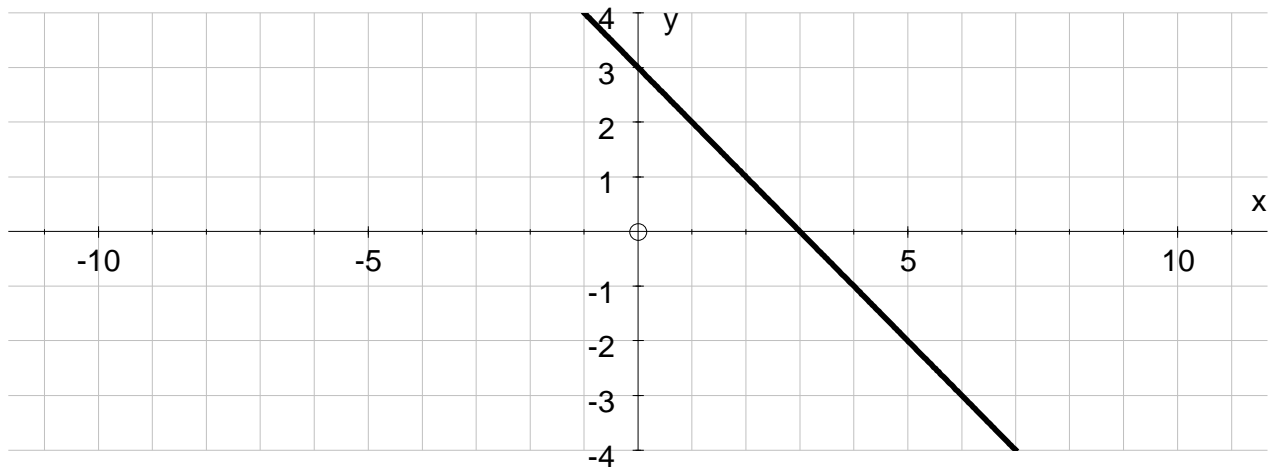
Graphing Functions: Group Answer Sheet

Graph of Function	Equation	What strategy did you use to match them? What were the clues?	Key words and expressions
A			x axis y axis origin gradient (m) intercept co-ordinates $y=mx+c$ equation substitute solution linear
B			
C			
D			
E			
F			
G			
H			
I			
J			

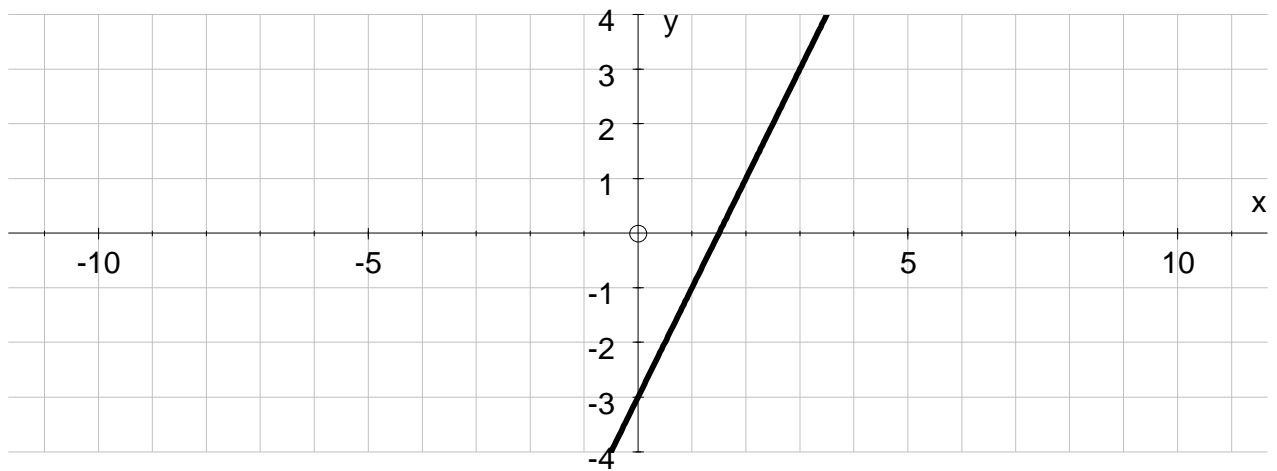
Graph A



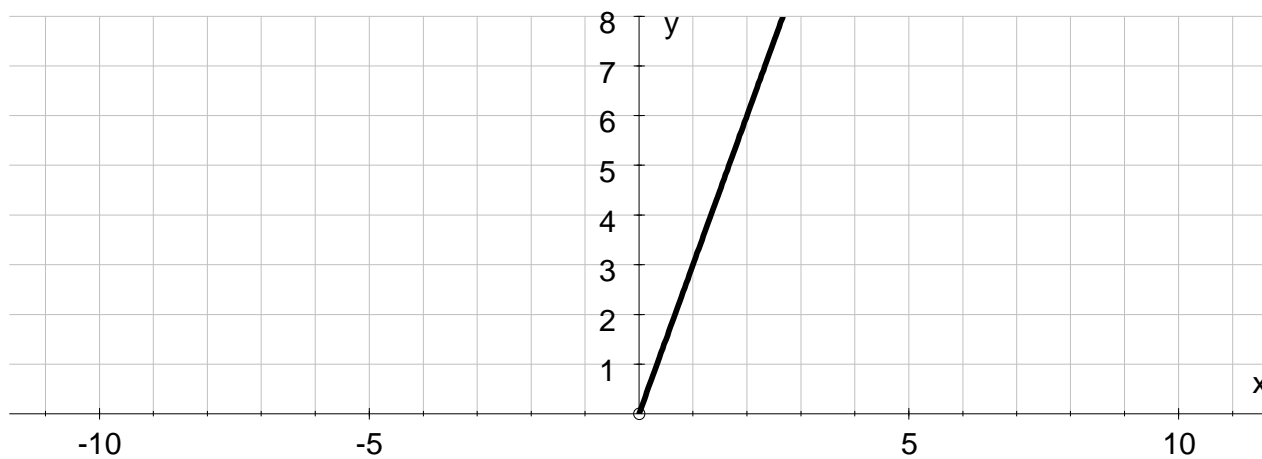
Graph B



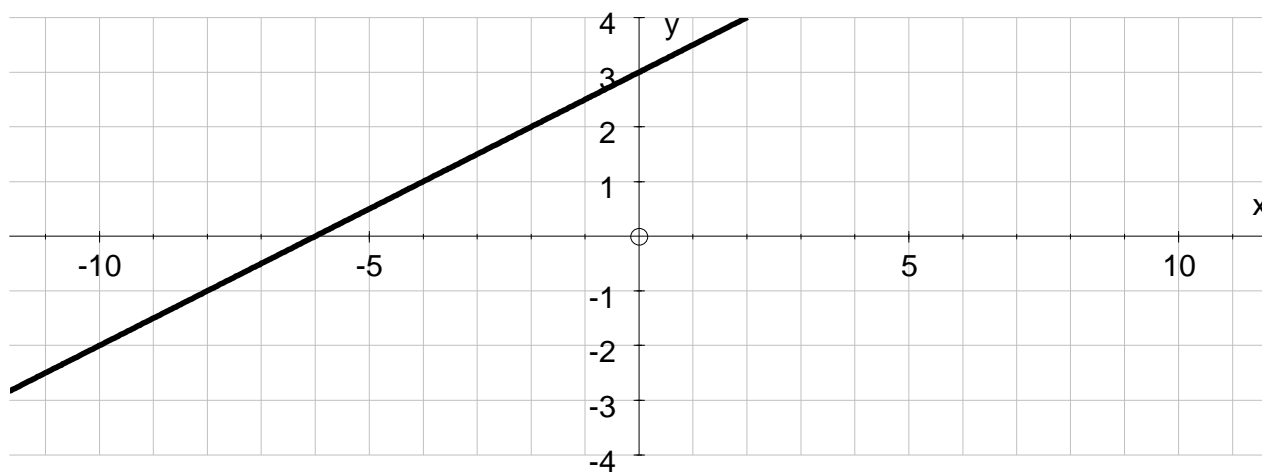
Graph C



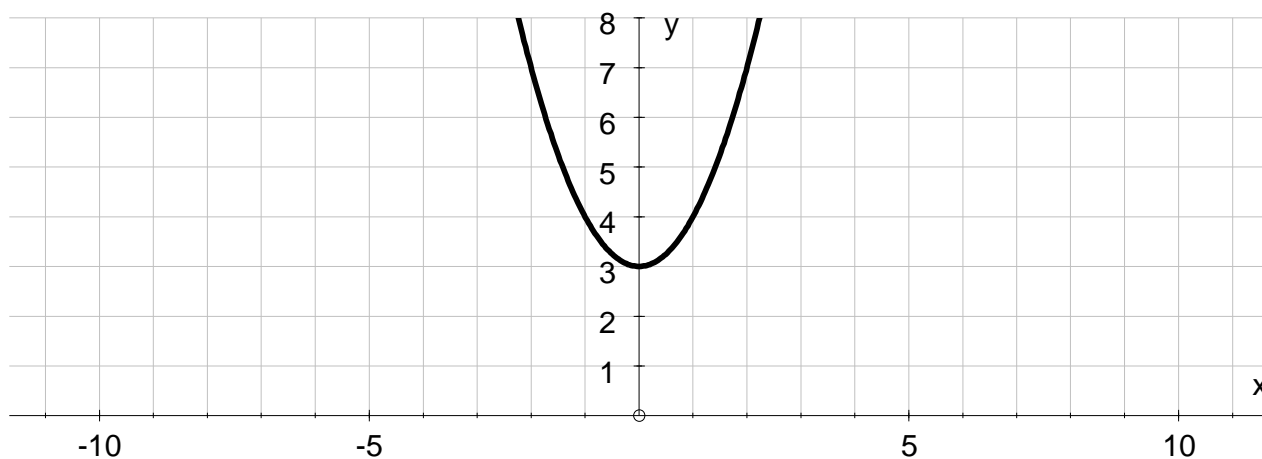
Graph D



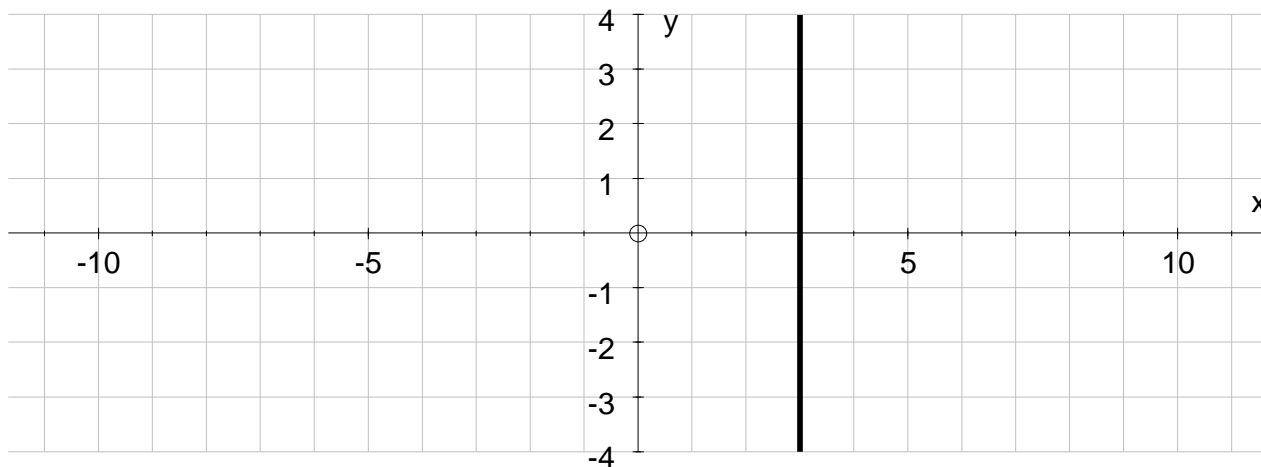
Graph E



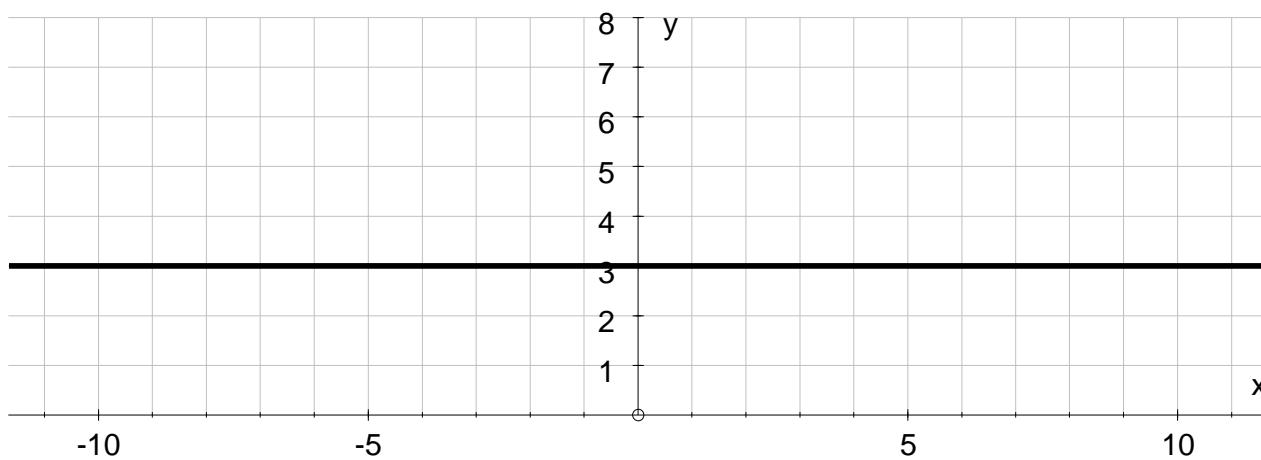
Graph F



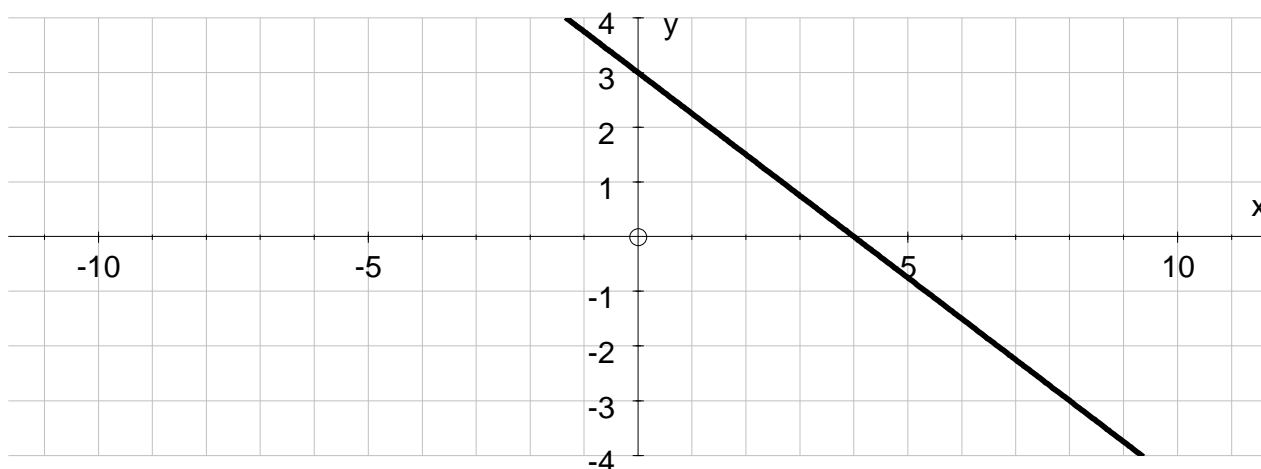
Graph G



Graph H



Graph I



Graph J

