JCOL BASIC SKILLS – PACK 7

Topics

Algebra – Can I manipulate formula to change the subject?	
1 ► 2000 JCOL Paper 1 – Question 1 (vii)	
Functions and Graphs – Can I find the point where a curve cuts the x -axis?	
2 ► 2012 JCOL Paper 2 – Question 5 (c) (ii)	
Geometry – Can I apply the alternate and corresponding angles theorems?	
3 ► 2012 JCOL Paper 2 – Question 9 (b)	
Coordinate Geometry – Can I find the point of intersection of two lines?	
4 ► 2017 JCOL Paper 2 – Question 10 (b)	
Patterns – Can I identify quadratic patterns?	
5 ► 2019 JCOL Paper 1 – Question 6	

www.mathspoints.ie for **worked solutions** to these questions.

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JCOL Revision – 50 Common Questions

1 > 2000 JCOL Paper 1 – Question 1 (vii)

Express *b* in terms of *a* and *c* when a + 4b = 3c.



2 > 2012 JCOL Paper 2 – Question 5 (c)

l is the line x + y - 5 = 0.

By letting y = 0, find the co-ordinates of the point where the line *l* meets the *x*-axis.

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3 > 2012 JCOL Paper 2 – Question 9 (b)

In the diagram below $l_1 \parallel l_2$. Write the measure of each angle shown by an empty box into the diagram, without using a protractor.





4 > 2017 JCOL Paper 2 – Question 10 (b)

Find the point of intersection of the following two lines.

$$y = 2x + 7$$
$$y = 5x - 11$$



5 > 2019 JCOL Paper 1 – Question 6

The first three patterns in a sequence are shown.



Pattern 1

Pattern 2

Pattern 3

(a) Draw Pattern 4 in the sequence.



(b) Fill in the table to show the number of small squares in each of the first four patterns.

Pattern	Number of small squares
1	
2	5
3	
4	

(c) The number of small squares in Pattern *n* is:

$n^2 + 1$

Use this to work out the number of small squares in Pattern 20.

(d) What kind of sequence is made by the number of small squares in each pattern?

Tick (\checkmark) one box only. Give a reason for your answer.

