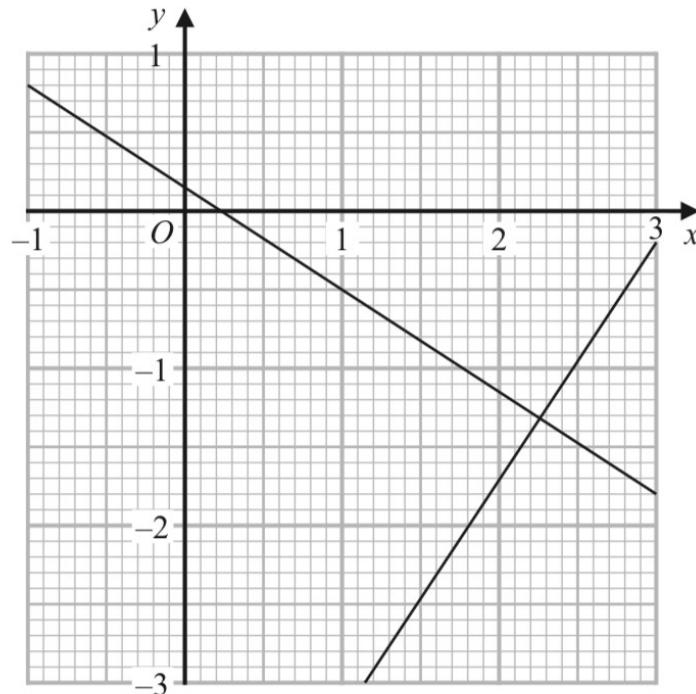


**Question 1 (2 Marks)**

The graphs with equations  $3y + 2x = \frac{1}{2}$  and  $2y - 3x = -\frac{113}{12}$  have been drawn on the grid below.



Using the graphs, find estimates of the solutions of the simultaneous equations

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

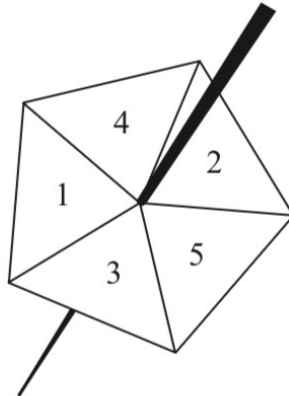
$$2y - 3x = -\frac{113}{12}$$

$x =$  .....

$y =$  .....

**Question 2 (4 Marks)**

Lina spins a biased 5-sided spinner 40 times.



Here are her results.

<b>Score</b>	1	2	3	4	5
<b>Frequency</b>	6	8	9	7	10

Lina is now going to spin the spinner another two times.

(a) Work out an estimate for the probability that she gets a score of 5 both times.

.....  
(2)

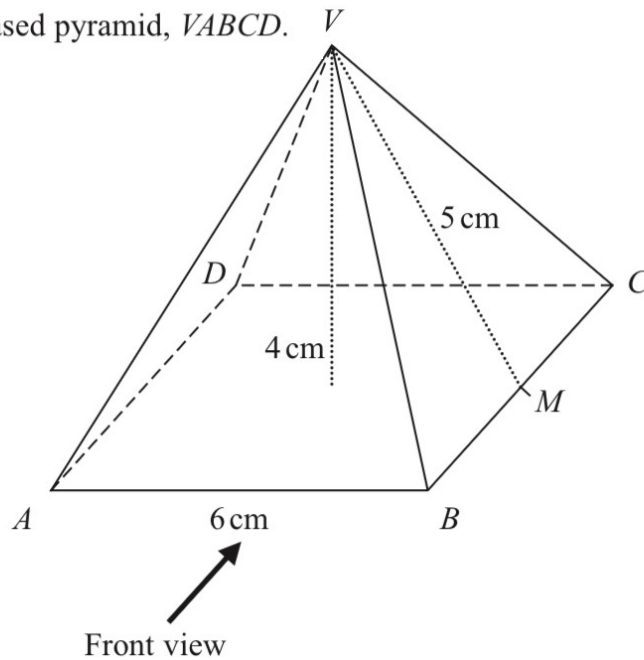
Derek is going to spin the spinner a large number of times.

(b) Work out an estimate for the percentage of times Derek can expect to get a score of 1

..... %  
(2)

**Question 3 (6 Marks)**

Here is a solid square-based pyramid,  $VABCD$ .

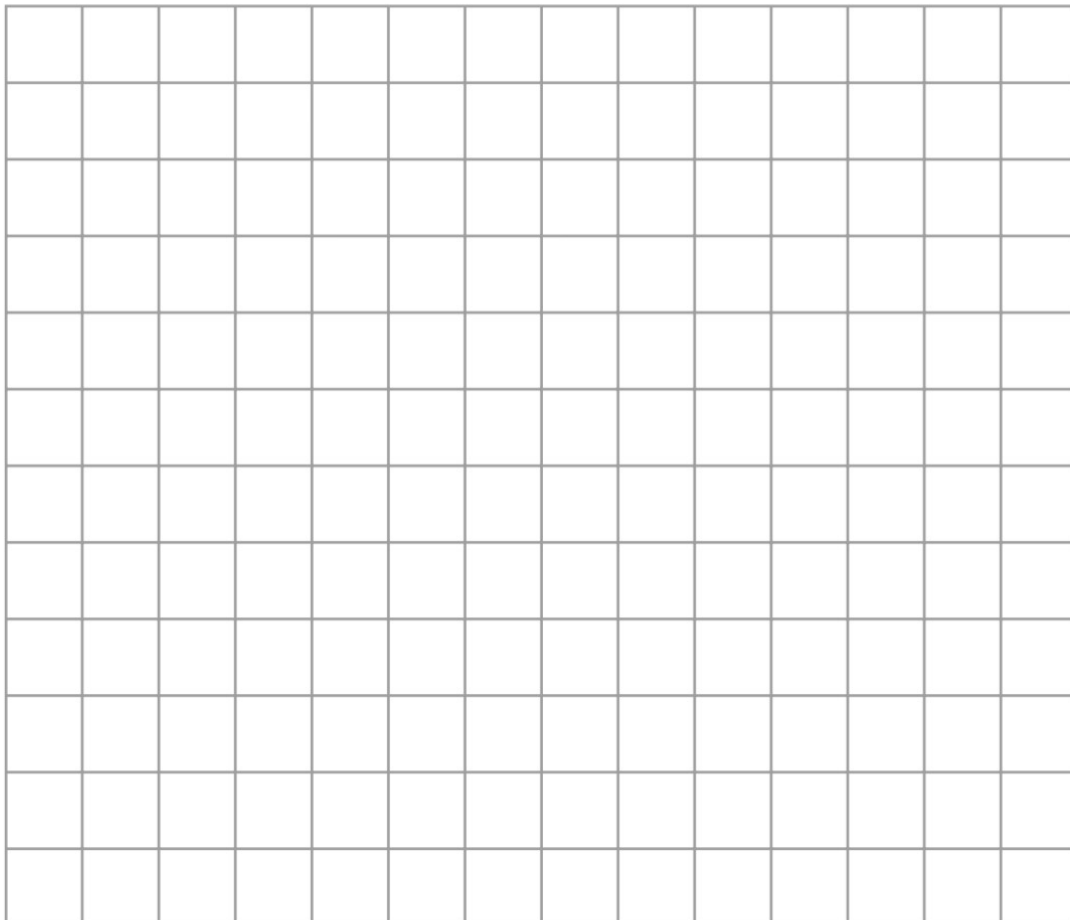


The base of the pyramid is a square of side  $6\text{ cm}$ .

The height of the pyramid is  $4\text{ cm}$ .

$M$  is the midpoint of  $BC$  and  $VM = 5\text{ cm}$ .

(a) Draw an accurate front elevation of the pyramid from the direction of the arrow.



(2)

(b) Work out the total surface area of the pyramid.

.....  
(4)

**Question 4 (3 Marks)**

(a) Simplify  $(p^2)^5$

.....  
(1)

(b) Simplify  $12x^7y^3 \div 6x^3y$

.....  
(2)

**(Total 15 Marks)**