# JCOL BASIC SKILLS – PACK 9

# Topics

Algebra – Can I solve equations with fractions?	
1 ► 2019 JCOL Paper 1 – Question 5	
Statistics – Can I work with pie charts?	
2 ► 2019 JCOL Paper 2 – Question 8	
Sets – Can I use Venn diagrams to solve problems?	
3 ► 2020 JCOL Sample Paper – Question 5 (f)	
Area, Perimeter and Volume – Can I calculate the volume of a cylinder?	
4 ► 2006 JCOL Paper 2 – Question 2 (c)	
Geometry – Can I apply the alternate and corresponding angles theorems?	
5 ► 2016 JCOL Paper 2 – Question 6	

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

Differences by Topic

JCOL Revision – 50 Common Questions

# 1 > 2019 JCOL Paper 1 - Question 5

Solve the equation:

$$\frac{2x+3}{5} = 7$$



#### 2 > 2019 JCOL Paper 2 - Question 8

The table below shows the calories in a fried chicken wrap.

Margaret is going to draw a pie chart to show this information.

The angles of some of the sectors are shown in the table.

Ingredient	Number of Calories (kcal)	Angle in Pie Chart
Wrap	150	90°
Fried chicken	240	144°
Cheese	130	
Mayonnaise		
Total	600	

(a) Work out the number of calories in the mayonnaise in the wrap.

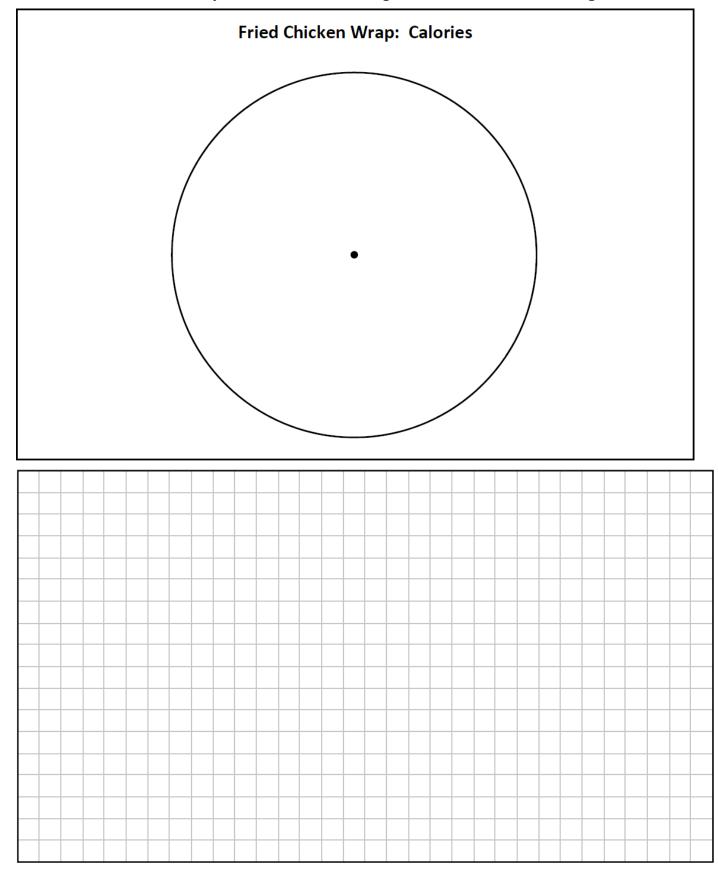
Write your answer in the appropriate space in the table above.

(b) Write the total number of degrees in the pie chart in the appropriate space in the table above.

(c) Work out the sizes of the two missing angles in the pie chart.

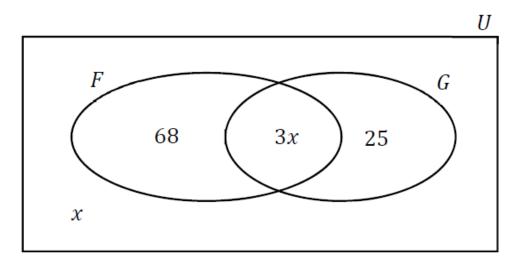
Write each answer in the appropriate space in the table above.

(d) Complete the pie chart below to show the information in the table.Label each sector clearly with the name of the ingredient **and** the size of the angle.



#### 3 > 2020 JCOL Sample Paper – Question 5 (f)

Kate carried out a survey on the students in her year (*U*) to see how many study French (*F*) or German (*G*). Her results are shown in the Venn diagram below, where  $x \in \mathbb{N}$ .



Kate finds out that there are 141 students in total in her year.

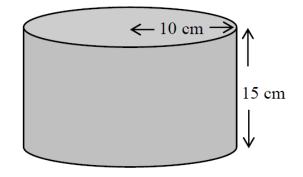
#### Work out the value of *x*.

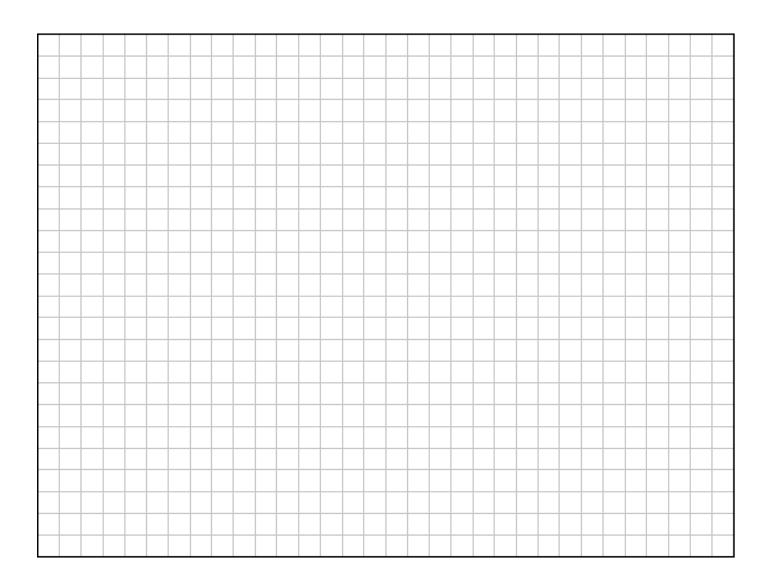


# 4 > 2006 JCOL Paper 2 – Question 2 (c)

A solid metal cylinder has radius 10 cm and height 15 cm.

Taking  $\pi$  as 3.14 , find, in cm³, the volume of the solid metal cylinder.





#### 5 > 2016 JCOL Paper 2 – Question 6

The triangle *BOP* has:

one side that is 8 cm long

one angle of 40°

one angle of 60°.

#### (a) Work out the size of the **third angle** in the triangle *BOP*.

(b) Draw a **sketch** of one such triangle *BOP*.

On your sketch, write in the size of all 3 angles, and the length of one of the sides.

Sketch:

# (c) **Construct** the triangle *BOP* from your sketch.

Construction: