

Mathematics Department Workshops

Topic: Simultaneous Equations

Resource Sheet HT1.SIM.2

Below are eight compound shapes and two shapes with areas of x and y .

Students may work in groups. Mini whiteboards would be useful to help with jottings

Starter

Starting activity could be to find the area of each of the compound shapes in terms of x and y .

Initial questions might be

- Draw a shape with an area of $2x$
- Draw a shape with an area of $4y$
- Draw a shape with an area of $x - y$ (this is fundamental to continuing with the task)

The compound shapes have the following areas

A- $2x$ D- $7x+y$ G- $4x+9y$

B- $2x+3y$ E- $2x+7y$ H- $4x+6y$

C- $6x+3y$ F- $4x-y$

Main activity

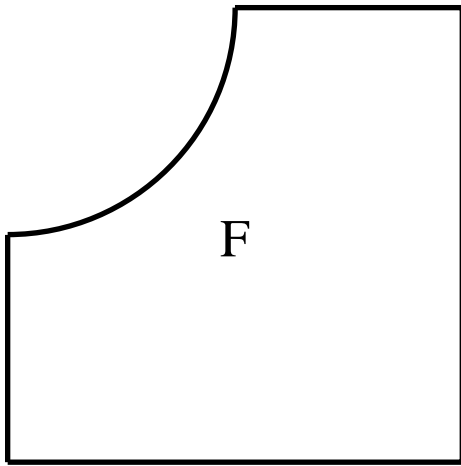
Students could work individually or in groups to answer questions such as

- Which shape has half the area of H?
- What's the difference in area between A and B? B and C?
- If you know that B has an area of 9cm^2 and C has an area of 21cm^2 what other areas can you work out?
- Shape P's area is written $3x + 2y$ and shape Q's area is written $3x - 2y$
 - Which
 - is the bigger shape and by how much?
 - If shape P has an area of 7cm^2 and shape Q has an area of 5cm^2 what's the area of shape x and shape y ?

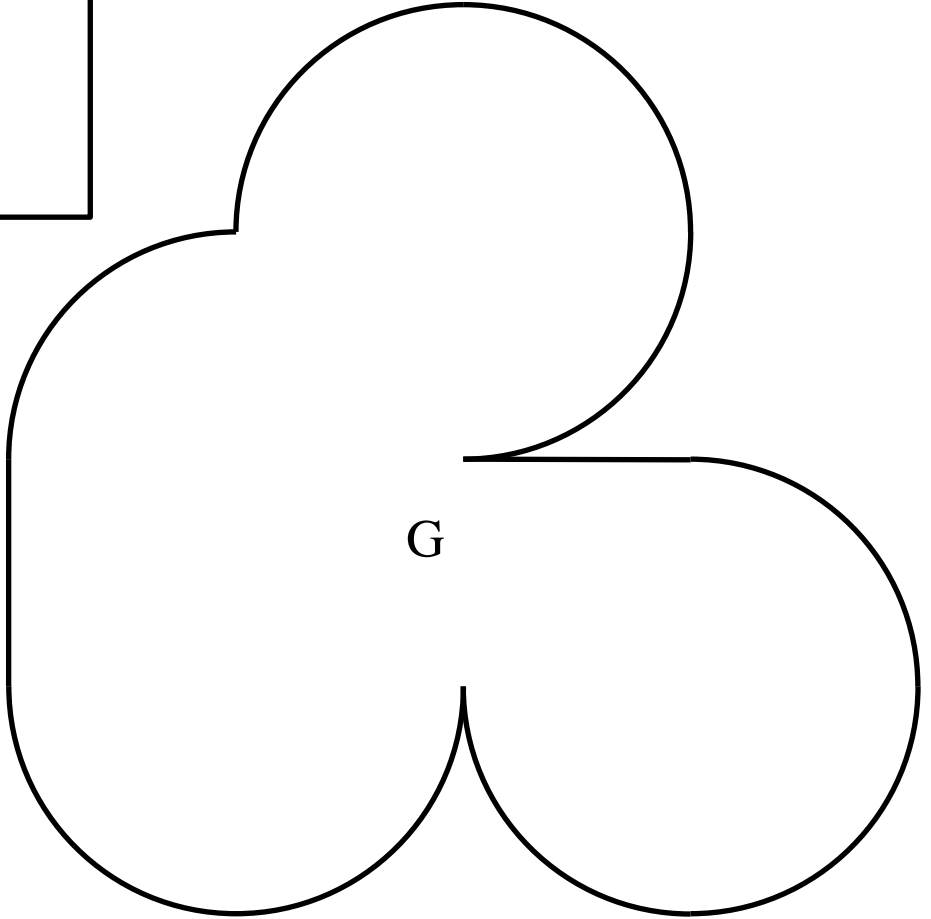
Plenary

- Which two shapes would you want to know the area of to make it easiest to find the areas of the others? Why?
- Why can't you work out the other areas if B has an area of 7cm^2 and H has an area of 14cm^2 ?

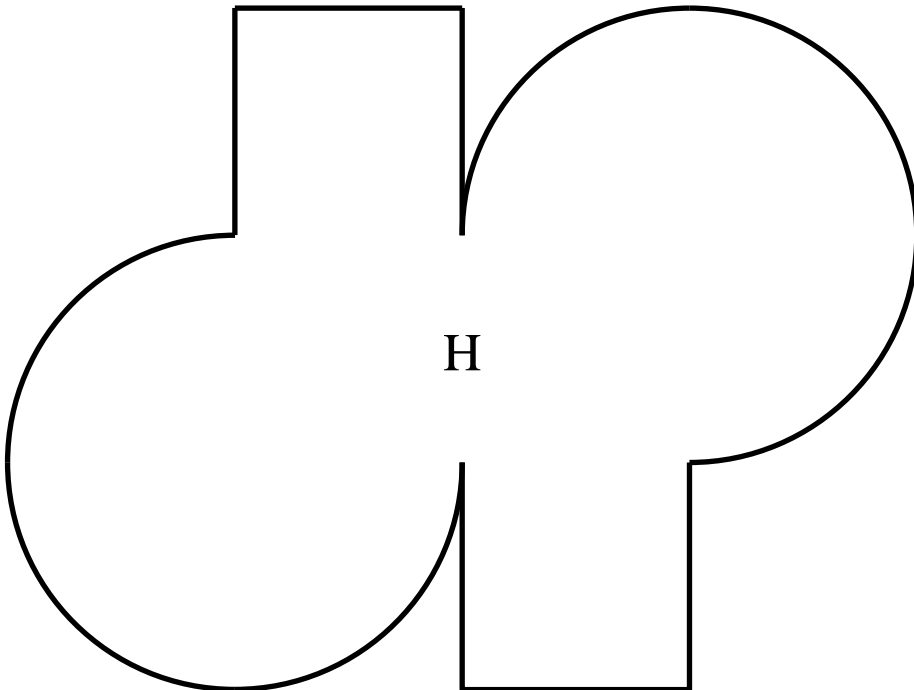
What's the smallest number of areas that you need to know to be able to work out all of the other areas?



F



G



H

