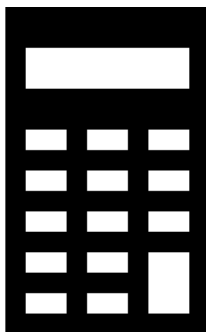AQA, OCR, Edexcel

GCSE

GCSE Maths

Geometry Problems Foundation
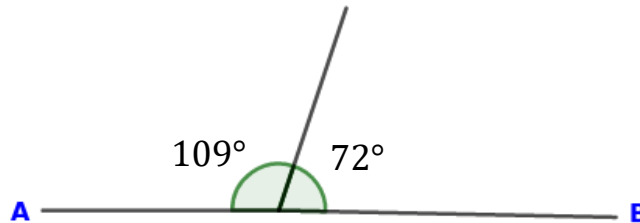
Name:

Guidance

1. Read each question carefully.
2. Don't spend too long on each question.
3. Attempt every question.
4. Always show your workings.

Revise GCSE Maths:
www.MathsMadeEasy.co.uk/gcse-maths-revision/

1. Measure and write down the values of the angles below.

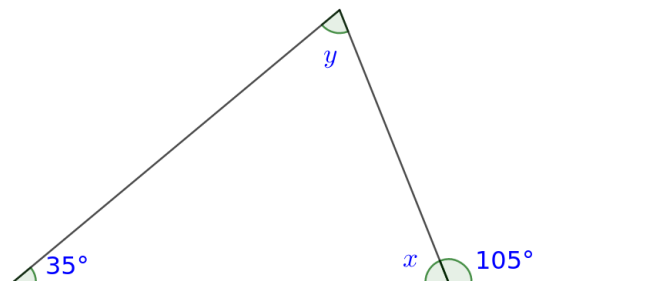   Is AB a straight line? Give your reasoning.

$$109° + 72° = 181°$$

   Angles on a straight line have to add up to $181°$, so this is not a straight line.

(2 marks, 1 mark)

2. In each case below, give your reasoning.

   Find x.

   Angles on a straight line add up to $180°$
   $$x = 180° - 105° = 75°$$
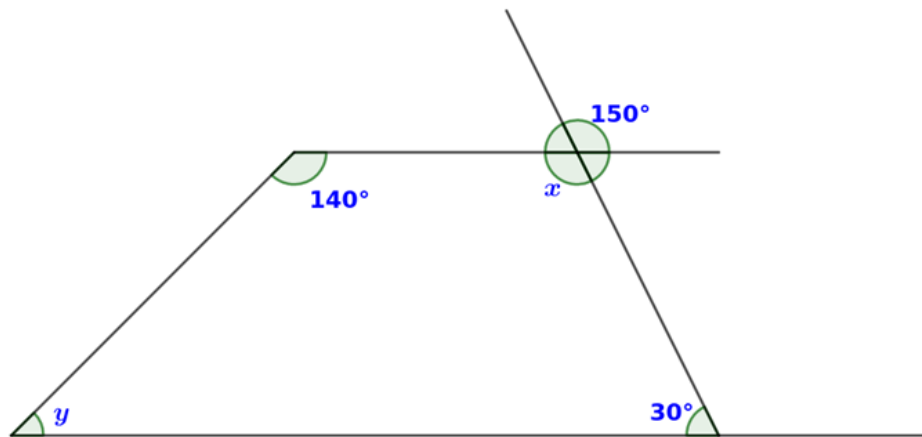
   Find y.

   Angles in a triangle add up to $180°$
   $$y = 180 - 75° - 35° = 70°$$

(2 marks)

3. In each case below, give your reasoning.

Find x.
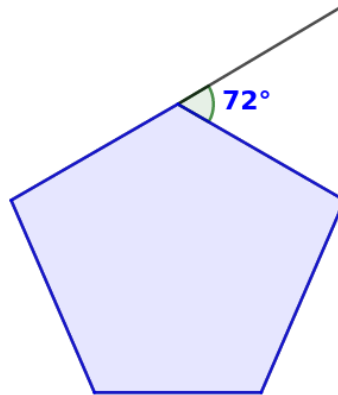
Opposite angles are equal
$$x = 150°$$

Find y.

Angles in a quadrilateral add up to 360°
$$y = 360° - 30° - 140° - 150° = 40°$$

(2 marks)

4. Given that all external angles of the pentagon are equal, is it regular?
You must explain your answer.
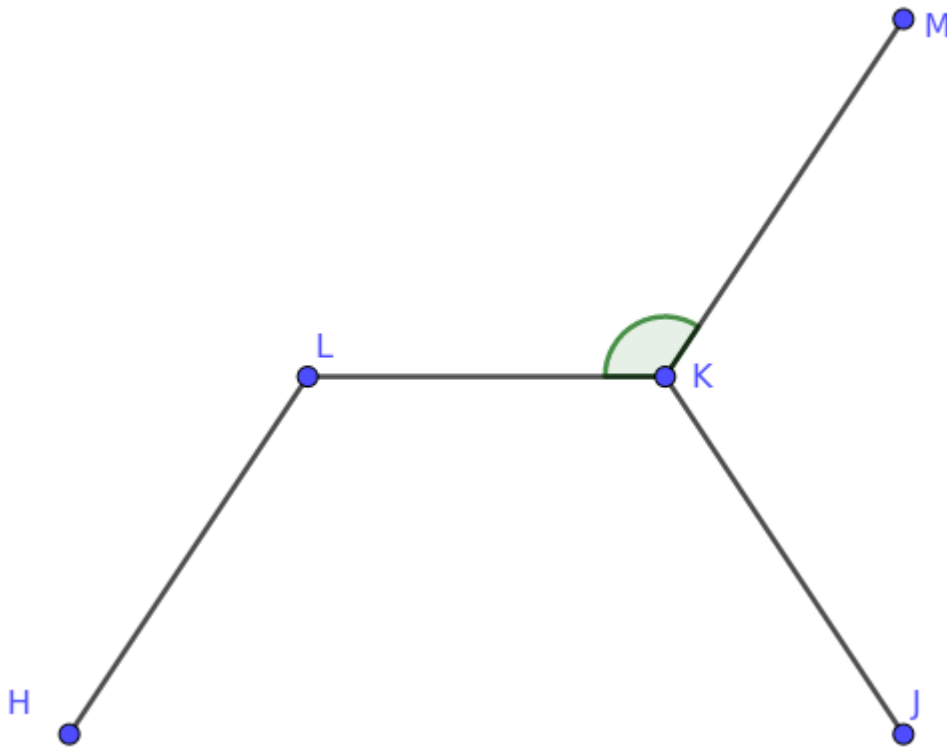The diagram is not drawn to scale.

$$72° \times 5 = 360°$$
All external angles have to add up to $360°$, so must be regular.

Alternatively, all internal angles are $180° - 72° = 108°$
Internal angles of a pentagon are $108°$, so must be regular.

(2 marks)

5. HLKJ is part of a regular hexagon, and MKJ is part of a regular octagon. Calculate the value of the angle LKM.

Angles in a regular hexagon are $120°$ *each.*

$$Angle\ LKJ = 120°$$
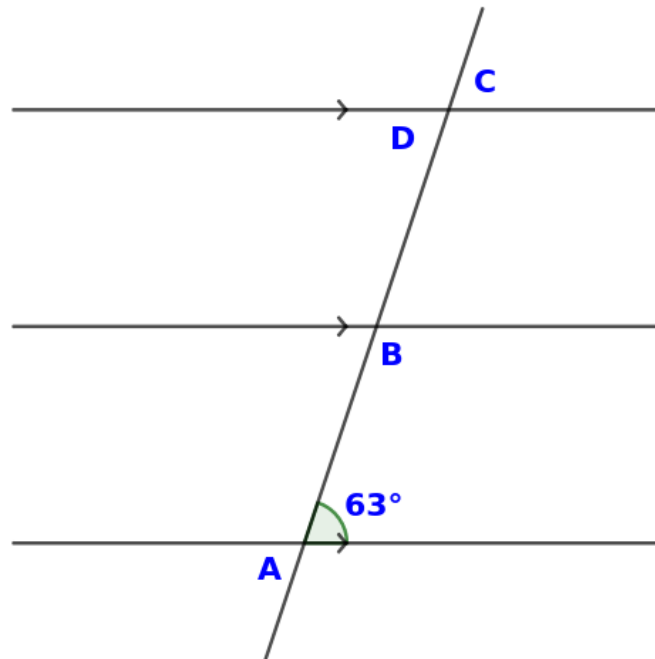
Angles in a regular octagon are $135°$ *each.*

$$Angle\ MKJ = 135°$$

Angles around a point have to add up to $360°$*, so the missing angle must be*

$$angle = 360° - 120° - 135° = 105°$$

(3 marks)

6. Given the 63° angle below, write down the values of the following angles and give your reasoning for each.

A:

63° because opposite angles are equal.

B:

$180° - 63° = 117°$ *interior angles add up to* $180°$

C:

63° because corresponding angles are equal. (Corresponding to $63°$)
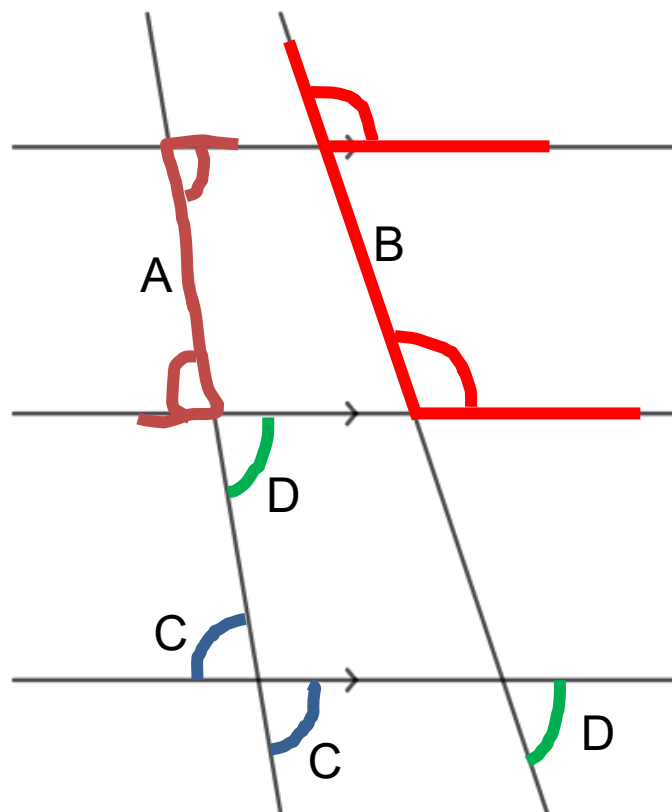
D:

63° because opposite angles are equal. (Opposite C)

(4 marks)

7. On the diagram below, mark the following angles:

- A pair of alternate angles with the letter A

- A pair of corresponding angles with the letter B

- Two vertically opposite angles with the letter C

- Two angles that are not directly related with the letter D

(5 marks)

Visit