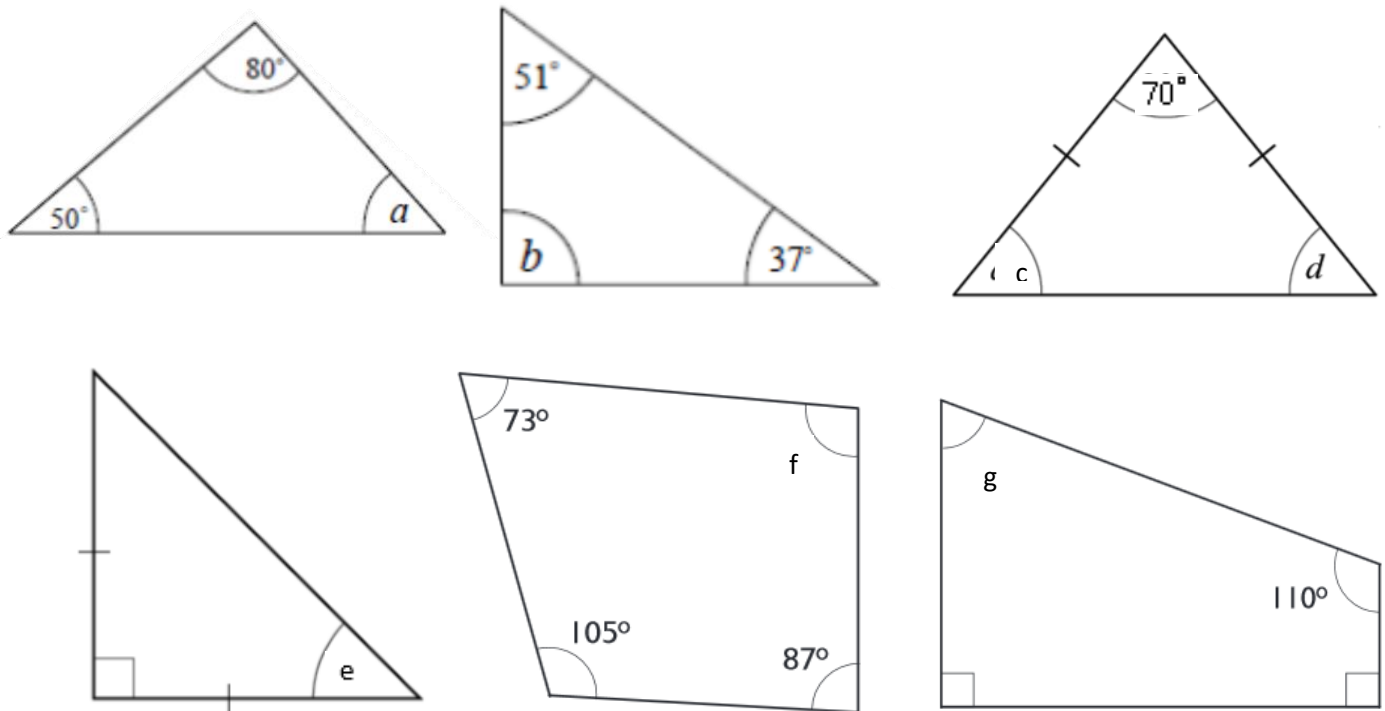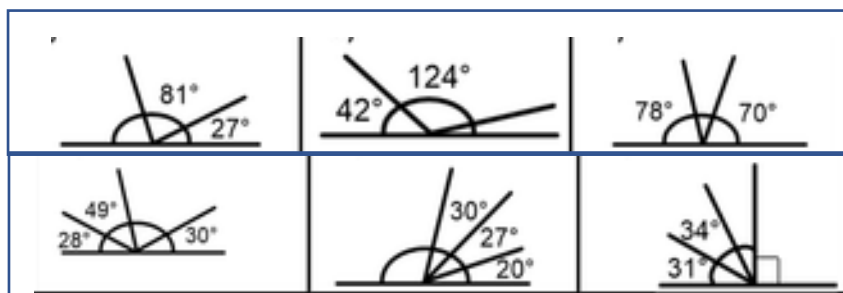## Group B – Maths
W/b 22.02.21

MONDAY - Can I calculate missing angles in triangles, quadrilaterals and on a straight line?

Challenge 2
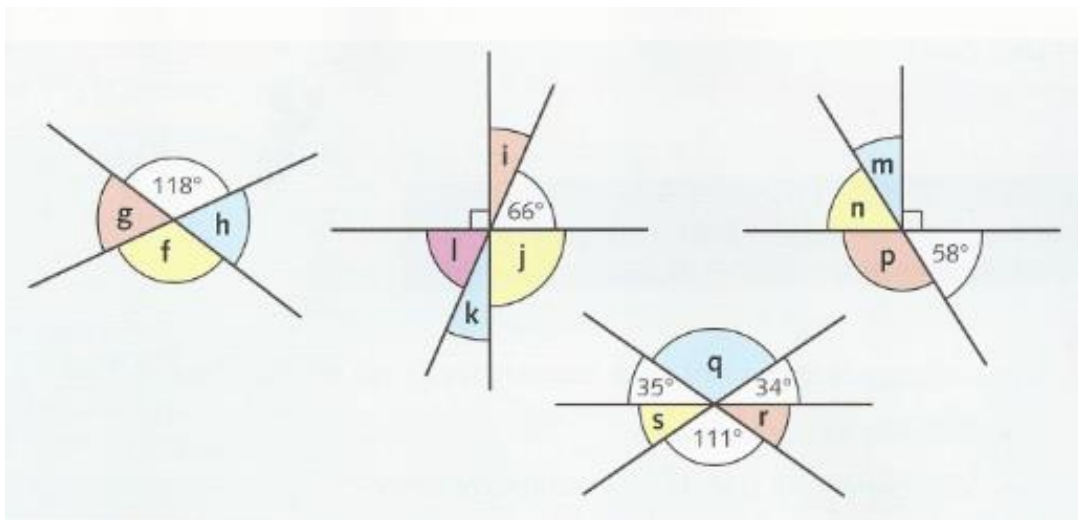
a) Calculate the missing angles.

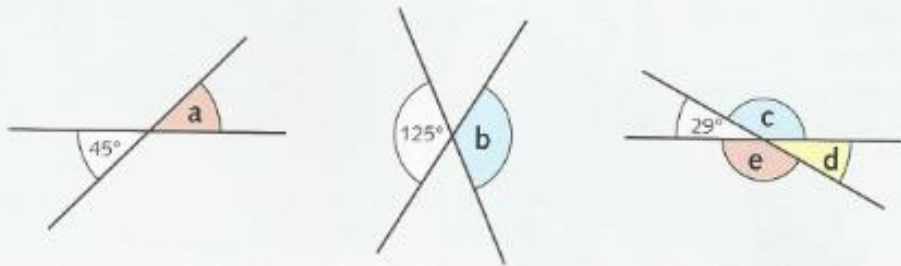
Tick the angles that make a straight line.
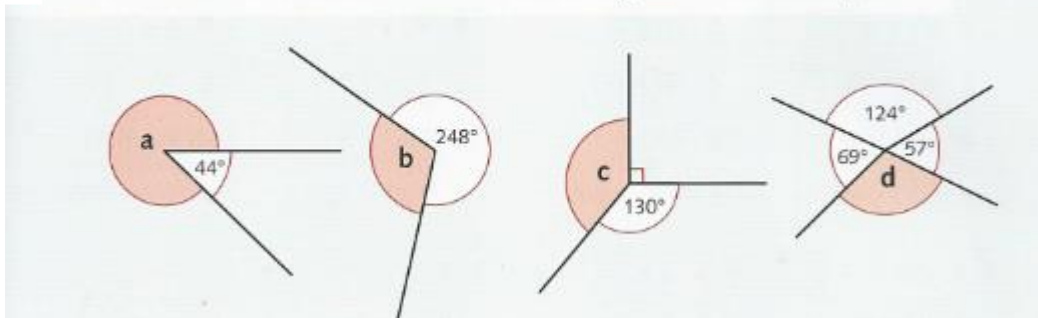- 45° and 135 °
- 110 ° and 60 °
- 50 °, 60 ° and 70 °
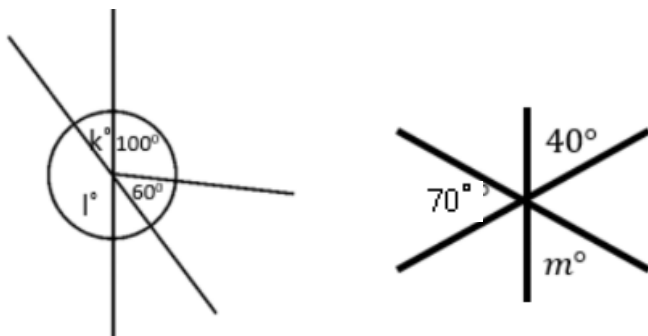- 115 °, 12 ° and 53 °

1 Calculate the size of each coloured angle, **a** to **s**.

2 Name and calculate the size of each shaded angle that meets at a point.

3

WEDNESDAY - Can I apply my knowledge of angles to a range of shapes and intersecting lines?

Challenge 1

For each angle:

- Calculate its size in degrees.
- Write whether it is acute, right, obtuse or reflex.

Example

$b = 180° - 140°$
$= 40°$
b is acute

2
108° c b a a

3
b a c 66°

4
a 95° b c 125°
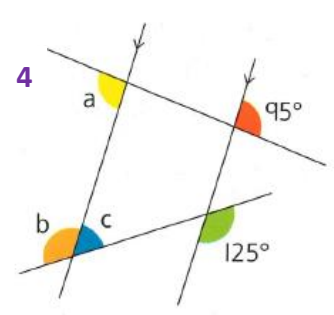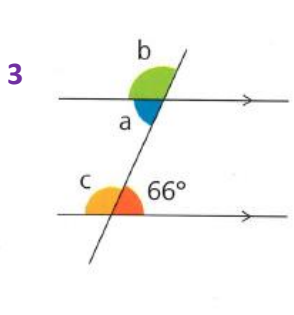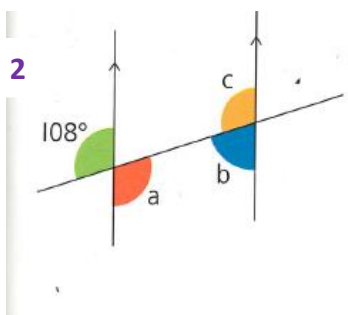
5 Work out the value of x and y.
Explain each step of your working.

x° 316° 56° y°

6 Work out the value of f and g.
Explain each step of your working.

104° 28° f° g° 39° 152°

7 Work out the value of x and y.
Explain each step of your working.

92° 39° x° y° 64°

Thursday - Can I apply my knowledge of angles to reasoning and problem-solving questions?

1

This shape is **three-quarters of a**
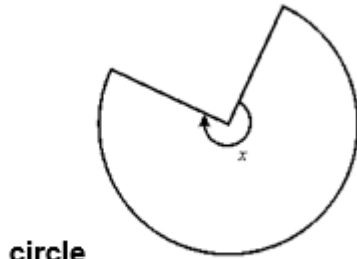
circle.

How many degrees is **angle x?**

2 Here is an **equilateral triangle** inside a **rectangle**.

Not to scale
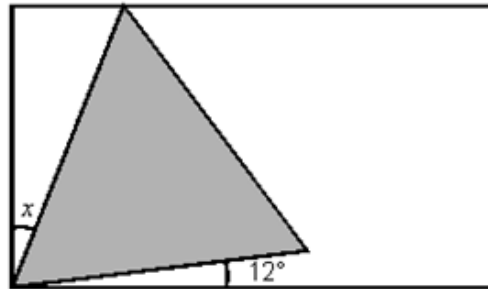
12°

Calculate the value of angle **X**.

Do **not** use a protractor (angle measurer).

3

Kasper draws a triangle.

He says, *'Two of the three angles in my triangle are obtuse'.*

Explain why Jamie **cannot** be correct.

4

Calculate the size of the reflex angle b.

b

33° 82° 132° 21°
a e d c
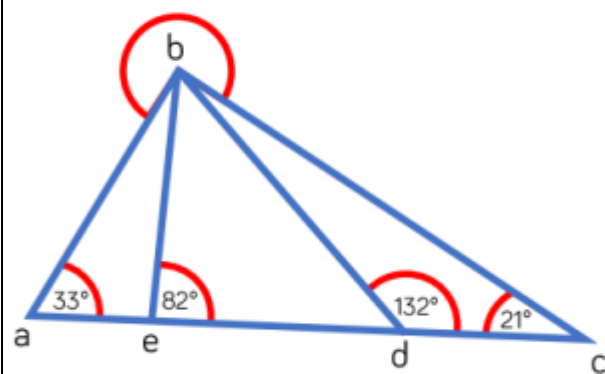
5

Here are two regular hexagons.

a
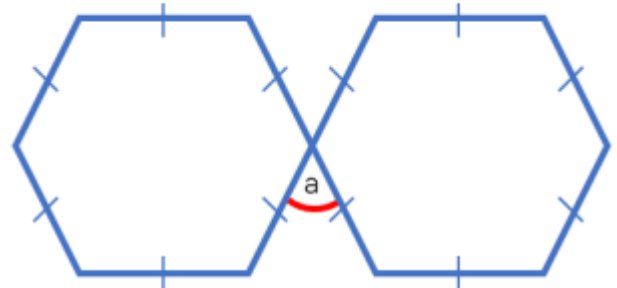
The interior angles of a hexagon sum to 720°
Use this fact to work out angle a in the diagram.

6

In this diagram, angle b is 4 times larger than angle a.

What is the size of each angle, a–d?
Explain your reasoning.

a b
d c

WEEKLY EXTRA CHALLENGE

Forgotten angles

Properties of shapes

Challenge

Johannes calculated the size of the missing angles in each of these shapes. However, he forgot to write the letter for each angle beside its correct size in the table.

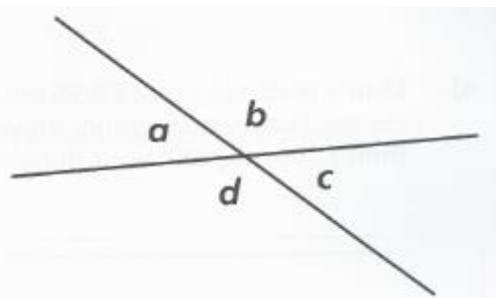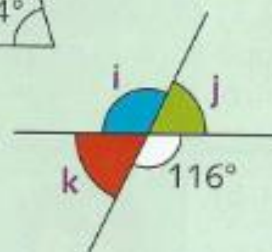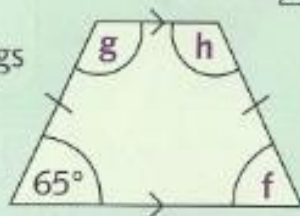Work out which letter, a to k, belongs to each angle.

Explain how you know.

You will need:
• ruler
• protractor (optional)

Letter	Size of angle
	148°
	115°
	27°
	117°
	64°
	53°
	115°
	116°
	38°
	64°
	65°

Angles shown in diagrams: a, 63°, b, 37°, 27°, c, 122°, d, 68°, 74°, e, g, h, 65°, f, i, j, k, 116°

Think about …

You need to **calculate** the size of the missing angles, not **measure** them.

For the 'What if?', draw your diagram as accurately as you can.

What if?

Three angles meet around a point.
One of the angles is a right angle.
The other two angles are equal.
What size are the other two angles?
Draw a diagram to prove it.

Four angles meet on a straight line.
One angle is 66°.
The other three angles are equal.
What size are the other three angles?
Draw a diagram to prove it.

ANSWERS

MONDAY
a) 50 ˚   b) 92 ˚   c & d) 55 ˚
e) 45 ˚   f) 95 ˚   g) 70 ˚

Challenge 2
72 ˚   14 ˚   32 ˚
73 ˚   103 ˚   25 ˚

1, 3 & 4 are all correct

TUESDAY
1
a) 45 ˚   b) 125 ˚   c) 151 ˚   d)29 ˚   e) 151 ˚   f) 118 ˚
g&h) 62 ˚   i) 24 ˚   j) 90 ˚   k) 24 ˚   l) 66 ˚   m) 32 ˚
n) 58 ˚   p) 122 ˚   q) 111 ˚   r) 35 ˚   s) 34 ˚

2
a) 316 ˚   b) 248 ˚   c) 140 ˚   d) 110 ˚

3

20 ˚ & 160 ˚
m= 60 ˚

WEDNESDAY

Challenge 1
a) 90 ˚   b) 40 ˚   c) 93 ˚ d)15 ˚   e)118 ˚ f)335 ˚

2
a) 108 ˚ b) 72 ˚   c) 108 ˚
3
a) 66 ˚   b & c) 114 ˚
4
a) 95 ˚   b) 115 ˚ c)65 ˚

5 x & y = 68 ˚
6   f = 132 ˚ g = 113 ˚
7   x = 49 ˚ y= 52˚

THURSDAY
 1) 90 ˚   2) 18 ˚
3) if two were obtuse, their angles added together would make greater than 180 ˚ which is impossible in a triangle.
4) b= 234˚   5) a = 36 ˚   6) a & c = 36 ˚   b&d = 144 ˚