22/02/21

(Starter) O LO: Can I round any number up to 1,000,000 to the nearest 10,000 or 100,000?

(Main) O LO: Can I use my knowledge of angles so far to express relationships between angles and shapes algebraically?

For an explanation of each activity below, click the link on Class 4's timetable titled 'Maths – weekly input'.

Starter:

Have a go at rounding the numbers below. Remember, when we round to the nearest 10,000, we look at the number in the thousands column to help us decide if we round up or down. When we round to the nearest 100,000, we look at the number in the ten thousands column to help us decide if we round up or down.

Place Value Grid

M	HTH	TTH	TH	H	T	U	t	h
Millions	Hundred thousands	Ten thousands	Thousands	Hundreds	Tens	Units	Tenths	Hundredths

Nearest 10,000:

51,750 [   ]

35,123 [   ]

42,897 ⬚

79,222 ⬚

Nearest 100,000:

131,525 ⬚

179,421 ⬚

213,301 ⬚

190,000 ⬚

Main:
We are going to keep our focus on angles at the beginning of this week just to consolidate our knowledge and to work with algebra in another way. Find the missing angles within the shapes below. Present your working out as follows, making sure to include the formula in your workings and answers:

Example 1 (if working with a triangle):
a = 180° - (b + c).
a = 180° - (35° + 74°)
a = 180° - 109°
a = 71°

Example 2 (if working with a quadrilateral):
a = 360° - (b + c + d)
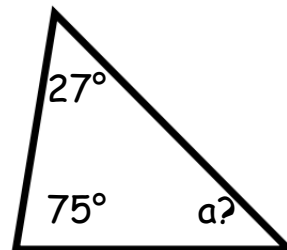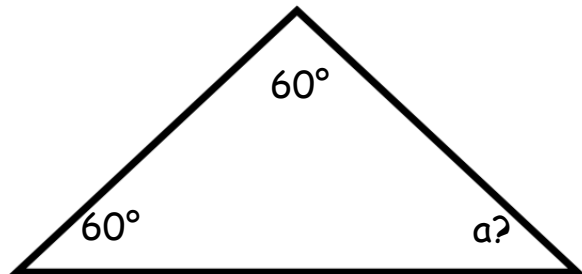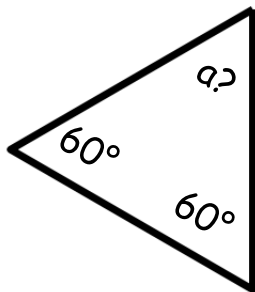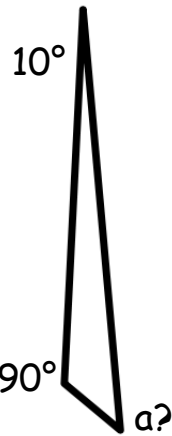a = 360° - (110° + 110° + 70°)
a = 360° - 290°
a = 70°
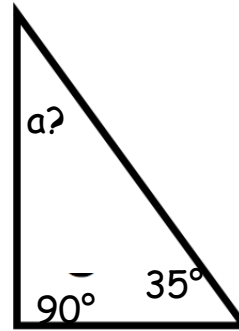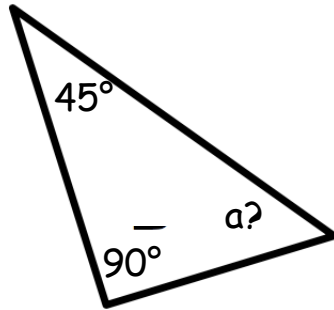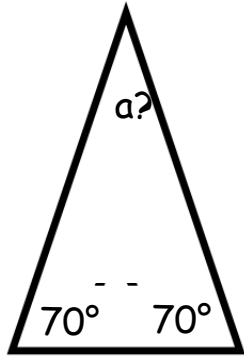
The following shapes are NOT to scale.

Triangle 1: a?, 70°, 70°

Triangle 2: 45°, 90°, a?

Triangle 3: a?, 90°, 35°

Triangle 4: 110°, 45°, a?

Triangle 5: 60°, 60°, a?

Triangle 6: 10°, 90°, a?

Triangle 7: 60°, 60°, a?

Triangle 8: 27°, 75°, a?

The following shapes are NOT to scale.

Shape 1 (trapezium): a, 70°, 130°, 110°

Shape 2 (rhombus): b, 70°, 50°, 120°

Shape 3 (quadrilateral): c, 115°, 95°

Shape 4 (quadrilateral): 85°, 65°, d, 105°

Shape 5 (quadrilateral with right angles): e, 52°

Shape 6 (quadrilateral): 138°, f, f
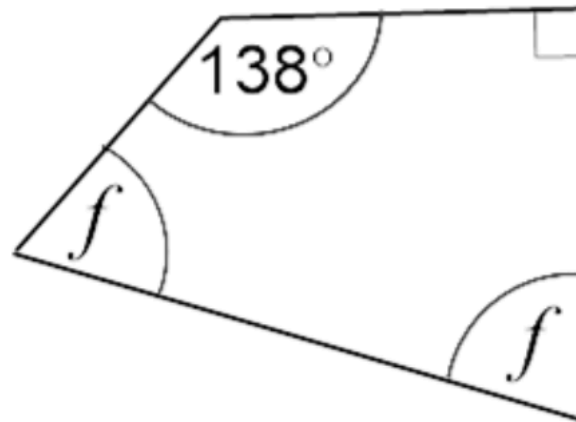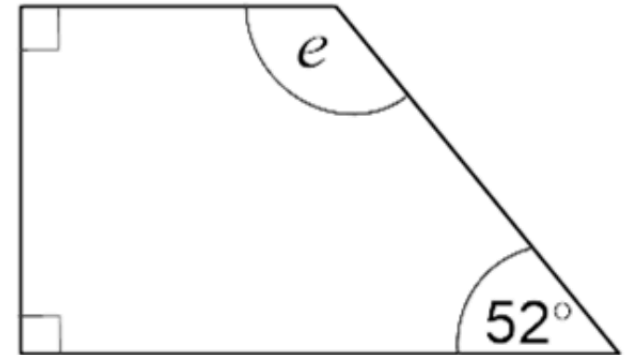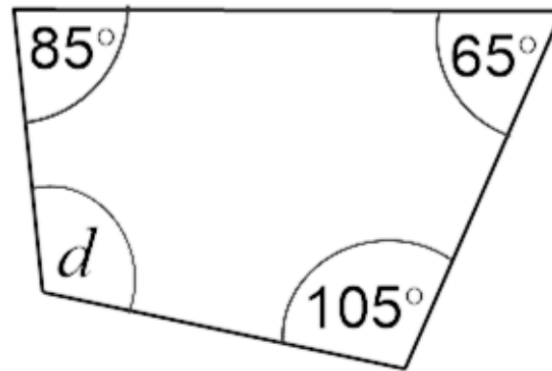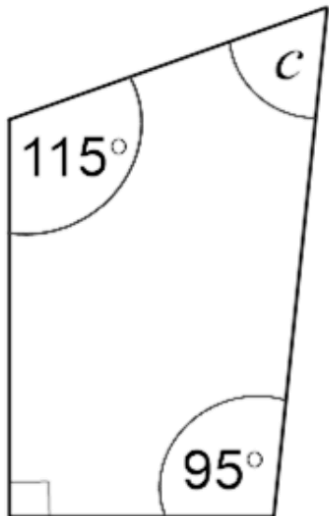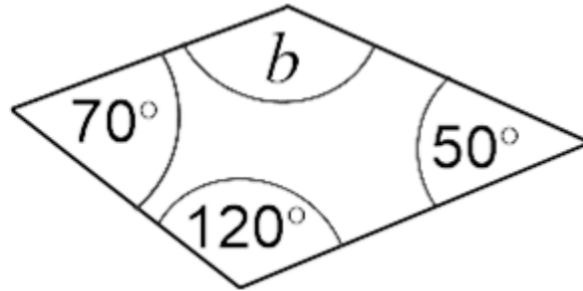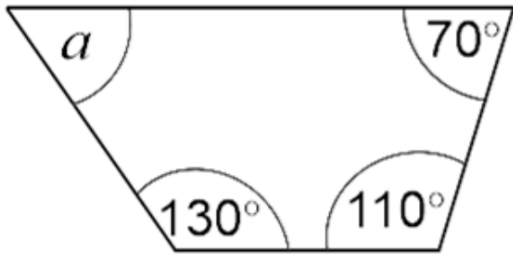
Extension:

Work out the missing angles both within and on the outside of the shape. Then present your findings using the formulas above (depending on if you are working with triangles or quadrilaterals). These are tricky, so do not worry if you do not get to the final answer by the end of this lesson!

75°

f

140°

e   d

The following shapes are NOT to scale.

a

120°

b

c   130°   40°

76°

109°   h

j   114°

i

g

85°

89°

z

y

x

64°

38°

w
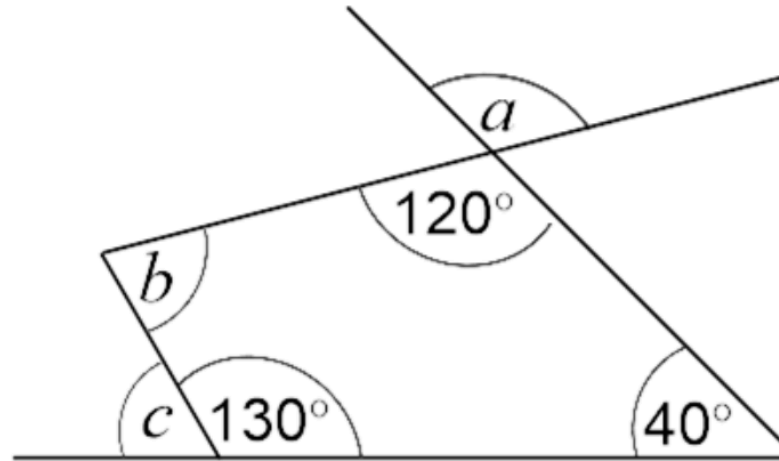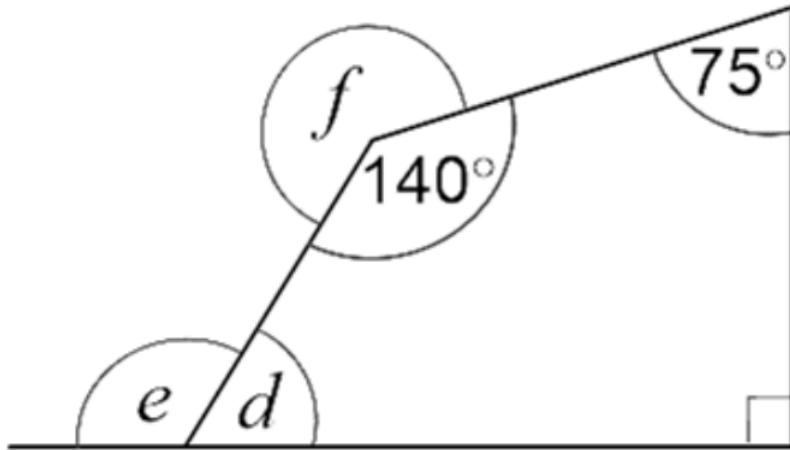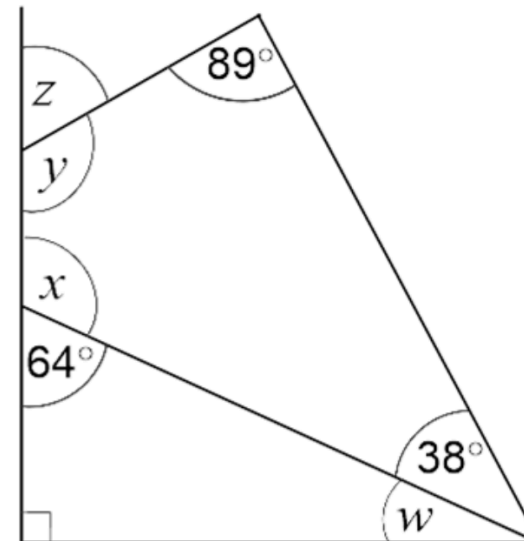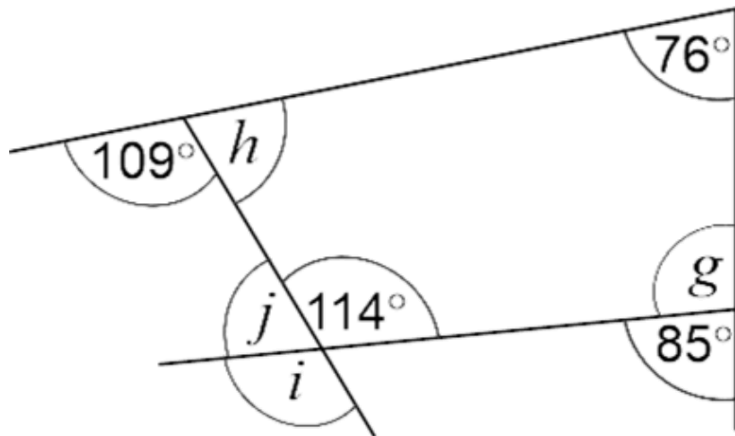
Hint: work out the missing angle in the triangle first!