Write your name, centre number and candidate number in the boxes below.

Surname	Other names

Centre number | | | | | |

Candidate number | | | | |

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Angles in polygons

Time allowed: 35 minutes

Subject code **0580**

Mathematics

Questions from Paper 1 and Paper 2

You must have: a ruler marked in centimetres and millimetres, a protractor, compasses, a pen, an HB pencil and an eraser.
You may use a calculator.

Total marks

/ 28

Instructions

- Answer every question in the space provided on this paper.
- Write in black or dark blue ink. Pencil may be used for diagrams and graphs.
- Fill in your name, centre number and candidate number above.
- Show your working: a correct method can earn marks even if the answer is wrong.
- Unless a question says otherwise, give answers that are not exact to 3 significant figures, and angles in degrees to 1 decimal place.

Information

- This paper has 10 questions worth 28 marks in total.
- The marks for each question or part are shown in brackets, for example [3].

Advice

- Read every question through once before you write anything.
- Use the marks in brackets to judge how long to spend on each part.
- If you finish early, go back and check your working.

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Turn over ►

Print at 100% (Actual size) so diagrams keep their real measurements.

1 A regular polygon has an exterior angle of 20°.

Work out the number of sides of this polygon.

..... [1]

Angles in polygons Click for more variations

2 Calculate the size of one exterior angle of a regular 15-sided polygon.

..... [2]

Angles in polygons Click for more variations

3 Calculate the size of one interior angle of a regular octagon.

..... [2]

Angles in polygons Click for more variations

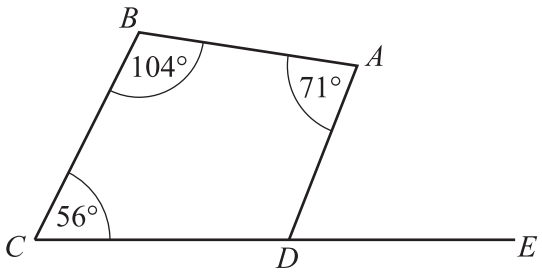
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4 Find the number of sides of a regular polygon with interior angle 160°.

..... [2]

Angles in polygons Click for more variations

5



NOT TO SCALE

CDE is a straight line.

Find angle *ADE*.

..... [2]

Angles in polygons Click for more variations

6 The interior angles of a pentagon are in the ratio 4 : 5 : 5 : 7 : 9.

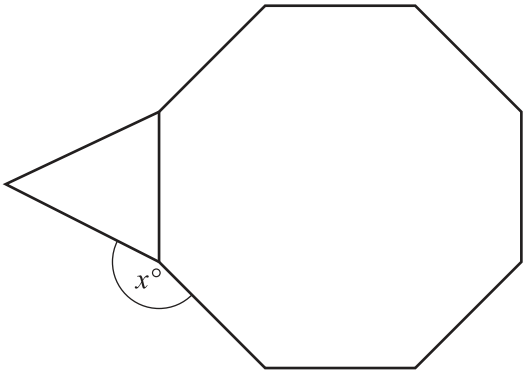
Find the size of the largest angle.

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..... [3]

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7 The diagram shows a regular octagon joined to an equilateral triangle.



NOT TO SCALE

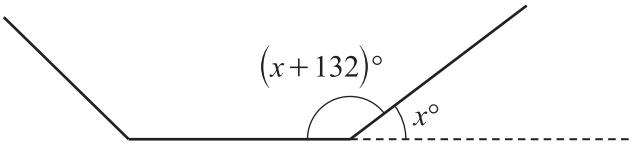
Work out the value of x.

$x =$ ..... [3]

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8



NOT TO SCALE

The diagram shows part of a regular polygon.
The interior angle of the polygon is 132° larger than the exterior angle.

Calculate the number of sides of this polygon.

..... [3]

Angles in polygons Click for more variations

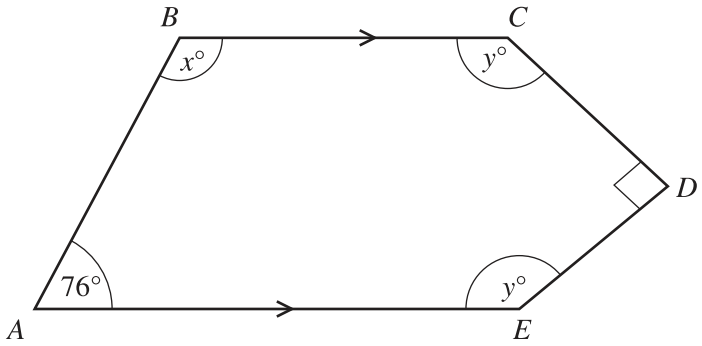
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9 **(a)** Show that the sum of the interior angles of a regular pentagon is 540°.

Answer(a)

[2]

(b)



NOT TO SCALE

The diagram shows a pentagon *ABCDE*.
BC is parallel to *AE* and angle *CDE* is a right angle.

Find the values of x and y.

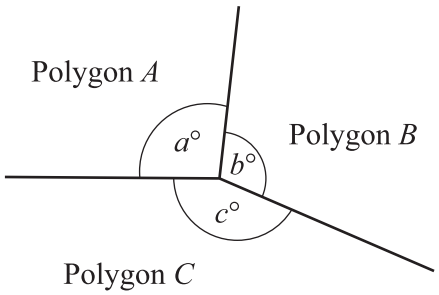
Answer(b) $x =$ .....

$y =$ ..... [3]

(a) Angles in polygons (b) Angles in polygons Click for more variations

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10



NOT TO SCALE

Three regular polygons A, B and C meet at a point.
The interior angles of the polygons are in the ratio $a : b : c = 3 : 4 : 5$.

Show that polygon C has twice the number of sides as polygon B.

[5]

Angles in polygons Click for more variations

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