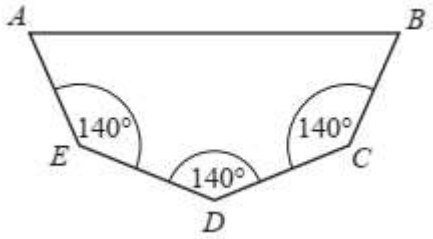


1. Find the sum of the interior angles of a 25-sided polygon. [2]
   0580/23/O/N/15 Q8)

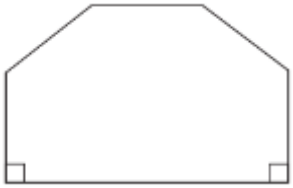
2. The pentagon has three angles which are each 140°.



   The other two interior angles are equal.
   Calculate the size of one of these angles. [3]
   0580/22/O/N/10 Q10)

3. Five angles of a hexagon are each 115°.
   Calculate the size of the sixth angle. [3]
   0580/21/M/J/16 Q17)

4. The front of a house is in the shape of a hexagon with two right angles.

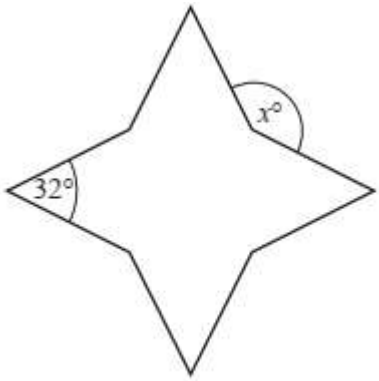


   The other four angles are all the same size.
   Calculate the size of one of these angles. [3]
   0580/21/O/N/11 Q6)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



5. The diagram shows an octagon.



All of the sides are the same length.
Four of the interior angles are each 32°.
The other four interior angles are equal.
Find the value of x [4].
0580/41/O/N/17 Q2(a)

6. A regular polygon has an interior angle of 176°.
Find the number of sides of this polygon. [3]
0580/22/O/N/19 Q12)

7. A regular polygon has an interior angle of 172°.
Find the number of sides of this polygon. [3]
0580/22/M/J/16 Q9)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



8. A regular polygon has an exterior angle of 40°.
   Work out the number of sides of this polygon. [2]
   0580/23/O/N/16 Q15(b)

9. The exterior angle of a regular polygon is 24°.
   Find the number of sides of this regular polygon. [2]
   0580/22/F/M/15 Q8(b)

10. The exterior angle of a regular polygon is 36°.
    What is the name of this polygon? [3]
    0580/22/O/N/13 Q9)

11. The diagram shows two of the exterior angles of a regular polygon with n sides.



    Calculate n.[2]
    0580/22/O/N/12 Q4)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



12. A regular polygon has n sides. Each exterior angle is 5n/ 2 degrees. Find the value of n. [3]
0580/43/O/N/11 Q3(b)

13. In a regular polygon, the interior angle and the exterior angle are in the ratio interior : exterior = 11 : 1.
Find the number of sides of this regular polygon. [3]
0580/22/F/M/23 Q12)

14. Calculate the size of one interior angle of a regular 12-sided polygon. [3]
0580/23/O/N/17 Q11)

15. Find the interior angle of a regular polygon with 18 sides.[3]
0580/23/O/N/14 Q7)

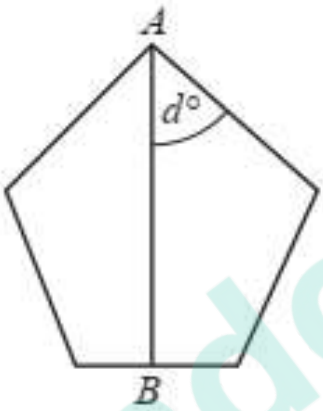
Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



16. A regular polygon has 72 sides.
    Find the size of an interior angle.
    0580/41/O/N/19 Q1(c)

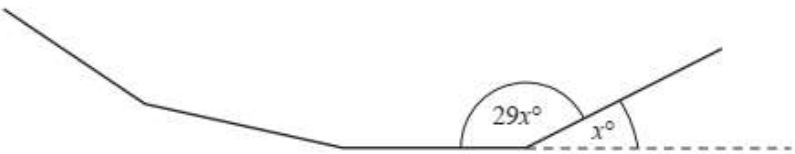
17. Show that each interior angle of a regular pentagon is 108°. [2]
    0580/42/M/J/19 Q7(a)

18. The diagram shows a regular pentagon.



    AB is a line of symmetry.
    Work out the value of d [3]
    0580/21/O/N/17 Q11)

19. The diagram shows part of a regular polygon.



    The exterior angle is x°.
    The interior angle is $29x$°.
    Work out the number of sides of this polygon. [3]
    0580/22/O/N/17 Q17)

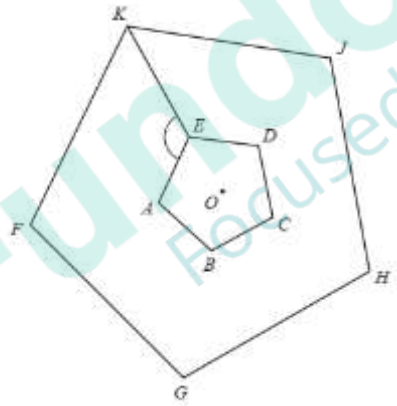
Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



20. The exterior angle of a regular polygon is $x°$
and the interior angle is $8x°$.
Calculate the number of sides of the polygon. [3]
0580/41/M/J/18 Q8(a)

21. In a regular polygon, the interior angle is 11 times the exterior angle.
(i) Work out the number of sides of this polygon. [3]
(ii) Find the sum of the interior angles of this polygon.[2]
0580/42/M/J/18 Q9(b)

22. The diagram shows two regular pentagons.

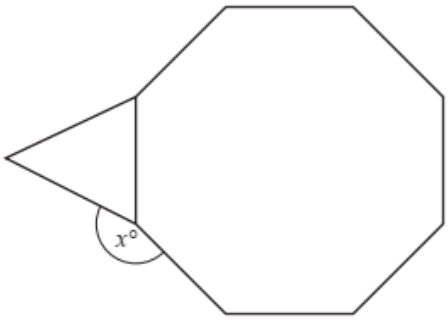


Pentagon FGHJK is an enlargement of pentagon
ABCDE, centre O. Find angle AEK. [4]
0580/23/M/J/19 Q25(a)

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/



23. The diagram shows a regular octagon



joined to an equilateral triangle. Work out the value of x [3].

0580/21/M/J/17 Q14)

24. The vertices A, B, C, D and E of a regular pentagon lie on the circumference of a circle, centre O, radius 7 cm.

They also lie on the sides of a rectangle WXYZ.

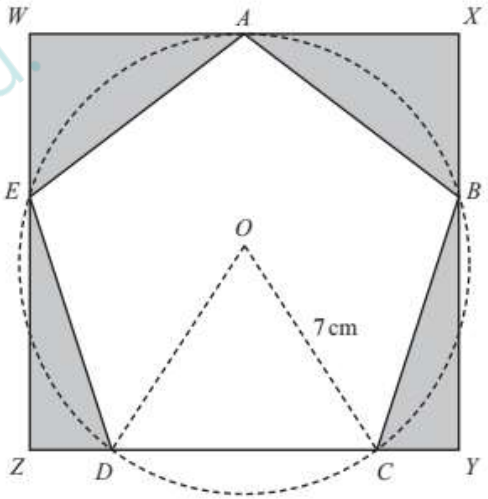
(a) Show that

(i) angle DOC = 72°, [1]

(ii) angle DCB = 108° [2]

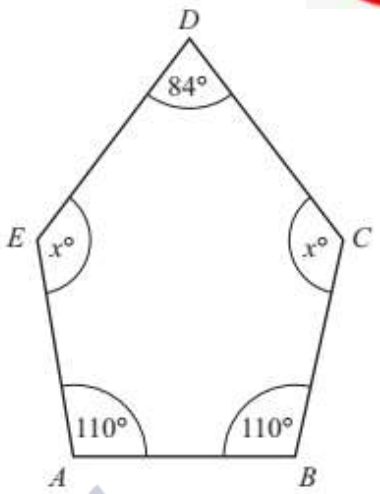
(iii) angle CBY = 18°. [1]

0580/41/O/N/12 Q7)

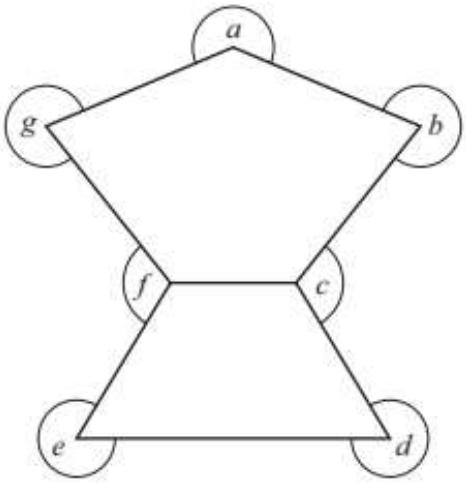


Fundoo Tutor
Focused. On You.

25. In the pentagon ABCDE, angle EAB = angle ABC = 110° and angle CDE = 84°.
Angle BCD = angle DEA = x°.
(i) Calculate the value of x [2]
(ii) BC = CD. Calculate angle CBD. [1]
(iii) This pentagon also has one line of symmetry. Calculate angle ADB. [1]
0580/41/M/J/13 Q8(a)



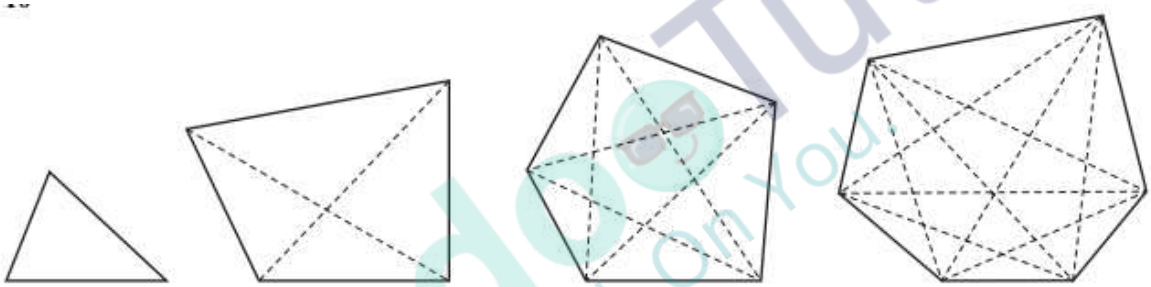
26. (a) One angle of an isosceles triangle is 48°.
Write down the possible pairs of values for the remaining two angles. ..... and ..... , ... and ..... [2]
(b) Calculate the sum of the interior angles of a pentagon. [2]
(c) Calculate the sum of the angles a, b, c, d, e, f and g shown in this diagram. [2]
0580/43/O/N/13 Q4



Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/

27. ABCDEF is a hexagon.
The interior angle B is 4° greater than interior angle A.
The interior angle C is 4° greater than interior angle B, and so on, with each of the next interior angles 4° greater than the previous one.
(i) By how many degrees is interior angle F greater than interior angle A? [1]
(ii) Calculate interior angle A. [3]
0580/43/M/J/10 Q5)

28. The diagrams show some polygons and their diagonals.



(a) Complete the table. [3]

Number of sides	Name of polygon	Total number of diagonals
3	triangle	0
4	quadrilateral	2
5		5
6	hexagon	9
7	heptagon	14
8		

(b) Write down the total number of diagonals in
(i) a decagon (a 10-sided polygon), [1]

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/

(ii) a 12-sided polygon.[1]

(c) A polygon with n sides has a total of $\frac{1}{p}n(n-q)$ diagonals, where p and q are integers.

(i) Find the values of p and q. [3]

(ii) Find the total number of diagonals in a polygon with 100 sides. [2]

(iii) Find the number of sides of a polygon which has a total of 170 diagonals. [2]

(d) A polygon with n + 1 sides has 30 more diagonals than a polygon with n sides.

Find n. [1]

0580/42/M/J/10 Q10)

Answers

Q1) 4140	Q11) 60	Q21) (i)24 (ii)3960
Q2) 60	Q12) 12	Q22) 126
Q3) 145	Q13) 24	Q23) 165
Q4) 135	Q14) 150	Q24) (i) 360/5 (ii)(180-72)/2 (iii) 180 – 90 – 72
Q5) 122	Q15) 160	Q25) (i)118 (ii) 31(iii)22
Q6) 90	Q16) 175	Q26) (a) 48 and 84 , 66 and 66 (b) 540 (c)1620
Q7) 45	Q17) (5-2)x 180 / 5	Q27) (c)(i)20 (ii)110
Q8) 9	Q18) 54	Q28) pentagon, octagon, 20 (b)(i) 35 (ii) 54 (c)(i) p = 2, q = 3 (ii) 4850 (iii) 20 (d) 31
Q9) 15	Q19) 60	
Q10) decagon	Q20) 18	

Fundoo Tutor offers personalized coaching for IGCSE, IB, and SAT students. Need a tutor? http://fundootutor.com/book-a-call/