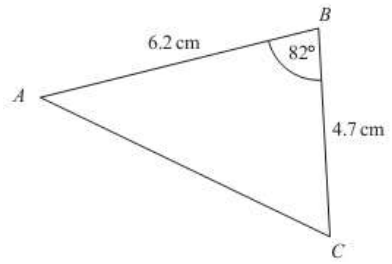
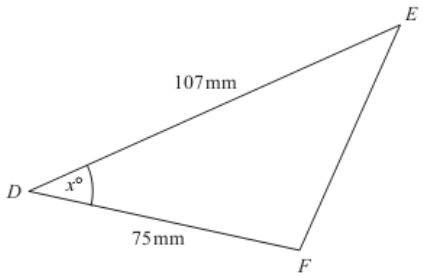
1. (a) Calculate the area of triangle ABC. [2]

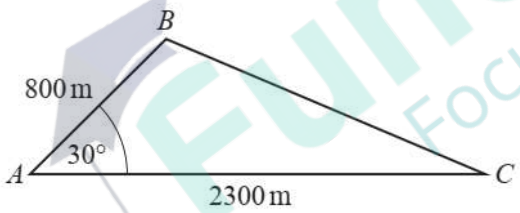


(b) The area of triangle DEF is 2050 mm^2.
Work out the value of x



0580/23/O/N/16 Q21)

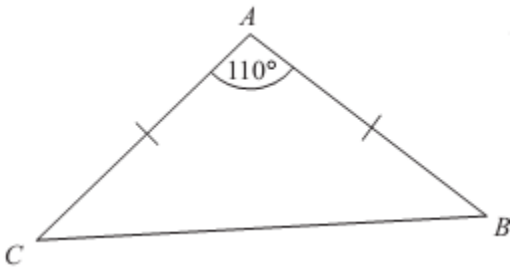
2. The diagram shows some land in the shape of a triangle ABC.



Houses are built on this land.
Each house requires 400 m^2 of land.
Find the greatest number of houses
that can be built on this land. [3]
0580/21/O/N/21 Q18)

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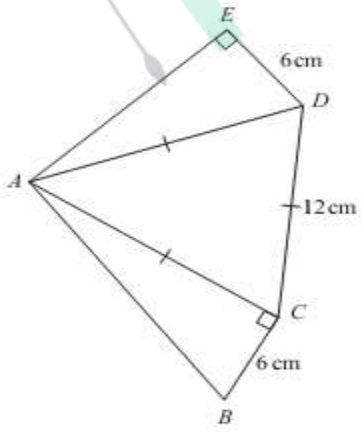
3. Triangle ABC is isosceles with AB= AC.



Angle BAC= 110° and the area of the triangle is 85 cm^2.
Calculate AC. [3]
0580/22/O/N/14 Q13)

4. In a triangle PQR, PQ =8 cm and QR =7 cm.
The area of this triangle is 17 cm^2.
Calculate the two possible values of angle PQR [3]
0580/22/M/J/17 Q19)

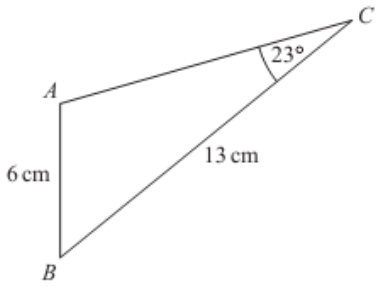
5. In the pentagon ABCDE, angle ACB =angle AED =90°.
Triangle ACD is equilateral with side length 12 cm. DE = BC =6 cm.
(i) Calculate angle BAE. [4]
(ii) Calculate AB. [2]
(iii) Calculate AE. [3]
(iv) Calculate the area of the pentagon.[4]



0580/43/M/J/18 Q6(a)

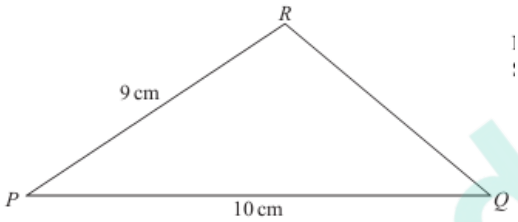
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6. In triangle ABC, AB= 6cm, BC= 13cm and angle ACB= 23°.
   Calculate angle BAC, which is **obtuse**. [4]



0580/23/O/N/12 Q18)

7. The area of triangle PQR is 38.5 cm^2.

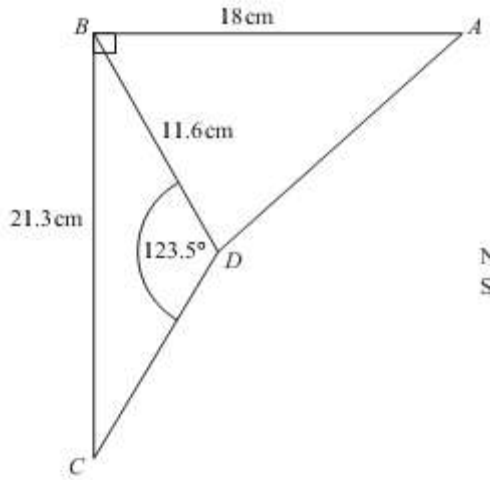


Calculate the length QR. [6]
0580/23/M/J/15 Q20)

8. A triangle has sides of length 2 cm, 8 cm and 9 cm.
   Calculate the value of the largest angle in this triangle. [4]
   0580/21/M/J/14 Q11)

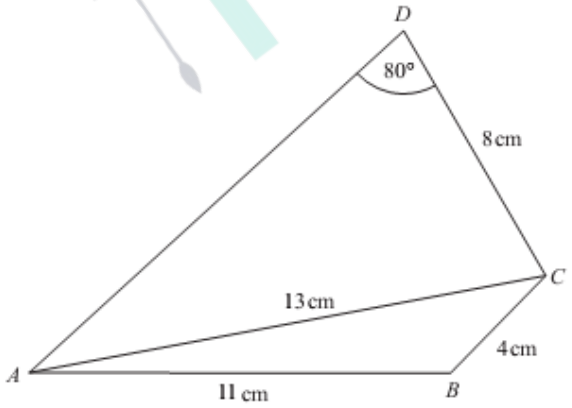
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9. In the diagram, AB = 18 cm, BC = 21.3 cm and BD = 11.6 cm. Angle BDC = 123.5° and angle ABC is a right angle.
   (i) Calculate angle BCD. [3]
   (ii) Calculate AD. [5]



0580/41/O/N/18 Q7(b)

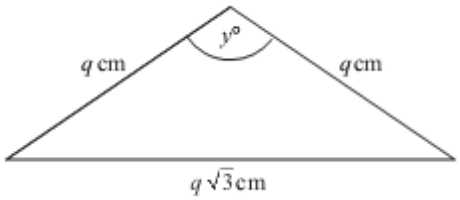
10. (a) Calculate angle ACB. [4]



(b) Calculate angle ACD. [4]
(c) Calculate the area of the quadrilateral ABCD. [3]
0580/43/O/N/18 Q6)

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11. The perimeter of the isosceles triangle is

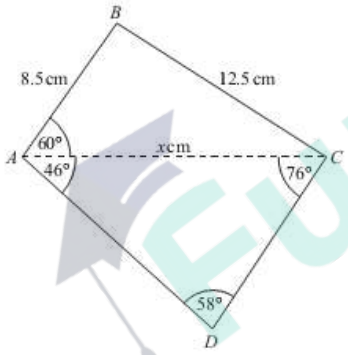


2q + q$\sqrt{3}$ centimetres.

Find the value of y. [4]

0580/41/O/N/16 Q10)(c)

12. The diagram shows a quadrilateral ABCD.



(a) The length of AC is x cm.

Use the cosine rule in triangle ABC to show that $2x^2 - 17x - 168 = 0$. [4]

(b) Solve the equation

$2x^2 - 17x - 168 = 0$.

Show all your working and give your answers correct to 2 decimal places. [4]

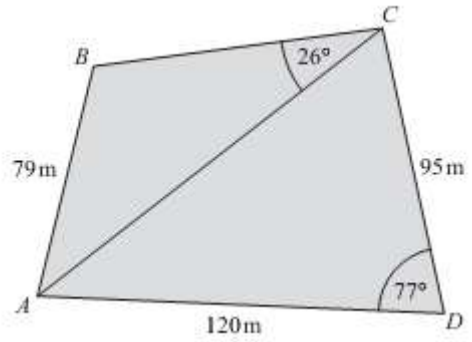
(c) Use the sine rule to calculate the length of CD. [3]

(d) Calculate the area of the quadrilateral ABCD. [3]

0580/41/O/N/17 Q10)(b)

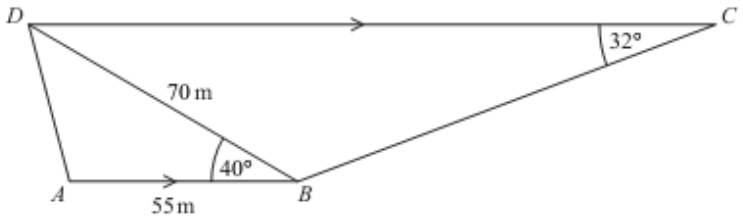
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13. The quadrilateral ABCD represents an area of land.
There is a straight road from A to C.
AB= 79m, AD= 120m and CD= 95m.
Angle BCA= 26° and angle CDA= 77°.



(a) Show that the length of the road, AC, is 135m correct to the nearest metre. [4]
(b) Calculate the size of the **obtuse** angle ABC. [4]
(c) A straight path is to be built from B to the nearest point on the road AC.
Calculate the length of this path. [3]
(d) Houses are to be built on the land in triangle ACD.
Each house needs at least $180m^2$ of land.
Calculate the maximum number of houses which can be built. Show all of your working. [4]
0580/41/O/N/11 Q6)

14. The diagram shows a school playground ABCD.
ABCD is a trapezium. AB= 55 m, BD= 70 m, angle ABD= 40° and angle BCD= 32°.



(a)Calculate AD. [4]
(b)Calculate BC. [4]

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(c) (i)Calculate the area of the playground ABCD. [3]

(ii)An accurate plan of the school playground is to be drawn to a scale of 1: 200 . Calculate the area of the school playground on the plan.

Give your answer in cm^2 [2]

(d)A fence, BD, divides the playground into two areas.

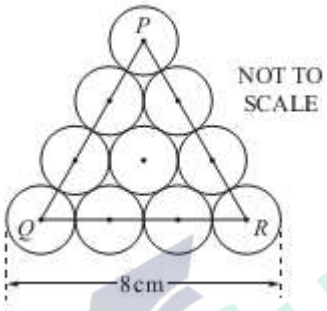
Calculate the shortest distance from A to BD. [2]

0580/41/O/N/13 Q4)

15. (a) The ten circles in the diagram each have radius 1 cm.

The centre of each circle is marked with a dot.

Calculate the height of triangle PQR. [3]



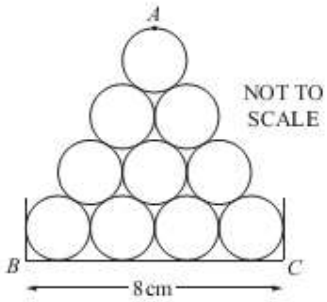
(b) Mr Patel uses whiteboard pens that are cylinders of radius 1 cm.

(i) The diagram shows 10 pens stacked in a tray.

The tray is 8 cm wide.

The point A is the highest point in the stack.

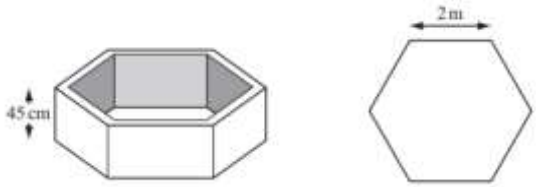
Find the height of A above the base, BC, of the tray.[1]



0580/42/F/M/16 Q10)

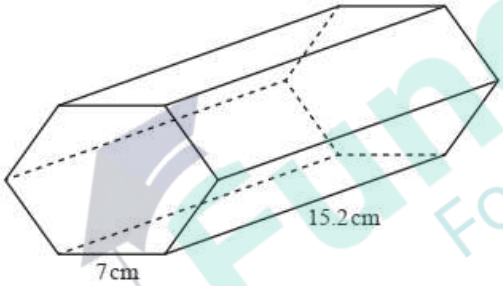
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16. Teresa builds a raised garden bed in the shape of
a hexagonal prism



The garden bed has a height of 45cm.
The cross section of the inside of the garden bed is
a regular hexagon of side 2 m.
Show that the area of the cross section of the inside
of the garden bed is 10.4m^2, correct to 3 significant figures. [3]
0580/41/O/N/14 Q1(b)

17. The diagram shows a solid prism with length 15.2cm.



The cross-section of this prism is a regular hexagon with side 7cm.
(i) Calculate the volume of the prism. [5]
(ii) Calculate the total surface area of the prism. [3]
0580/42/F/M/18 Q5)

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Answers

Q1) (a) 14.4 (b) 30.7	Q10) (a) 52[.0] (b) 62.7 (c) 66.7
Q2) 1150	Q11) 120
Q3) 13.5	Q12) 14.35, –5.85 (c) 12.2 (d) 138
Q4) 37.4 and 142.6	Q13) (a) 135.4 (b) 131.3 to 131.5 (c) 30.4 (d)30.9 leading to 30
Q5) (i) 116.6 (ii) 13.4 (iii) 10.4 (iv) 130	Q14) (a) 45.[0] (b) 84.9 (c) (i) 4060 (ii) 1020 (d) 35.4
Q6) 122.2	Q15) (a) 5.2[0](b)(i) 7.2[0]
Q7) 9.37	Q16) $6 \times 0.5 \times 2 \times 2 \times \sin 60$
Q8) 114	Q17) (i) 1930 or 1940 (ii) 893
Q9) (i) 27[.0] (b)(ii) 15.9	

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