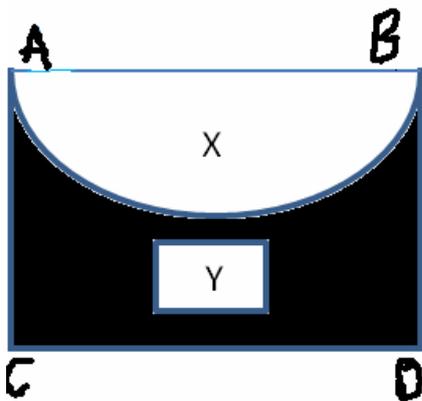
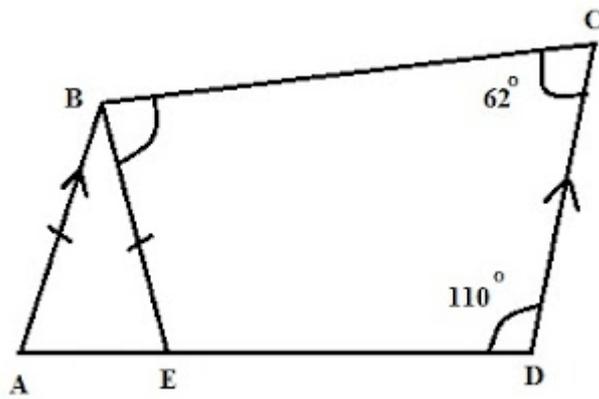


The figure shows a semi circle enclosed in a square ABCD. The perimeter of region X is 36cm. The perimeter of region Y is 64cm. Find

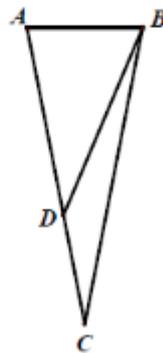
- The perimeter of square ABCD.
- The area of region Y. Express your answer as a whole number.



In the figure below, ABCD is a trapezium. E is a point on AD such that $AB=BE$. Angle $BCD=62^\circ$ and angle $CDE=110^\circ$. Find angle EBC.

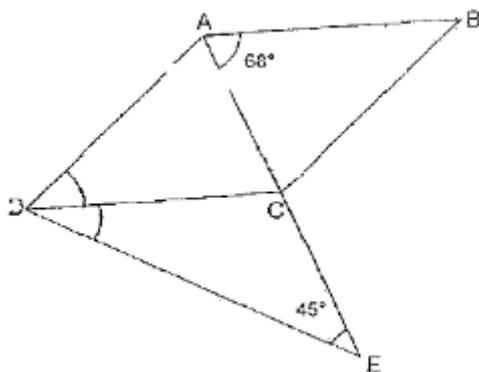


Q6 The diagram shows an isosceles triangle ABC where $AC = BC$ and $\angle BAC = 80^\circ$.
 Given that $AB = CD$, find the value of $\angle BDC$.



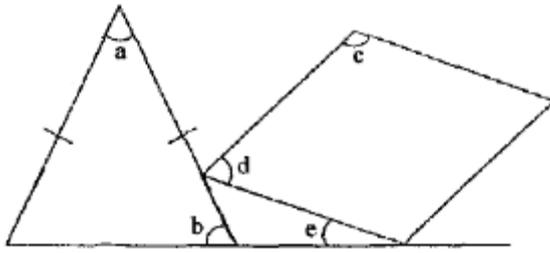
Solutions to this question by accurate drawing will not be accepted.

In the figure below, not drawn to scale, $ABCD$ is a rhombus. $\angle BAC = 68^\circ$ and $\angle CED = 45^\circ$.
 a) Calculate $\angle ABC$. [1m]
 b) Calculate $\angle CDE$. [2m]

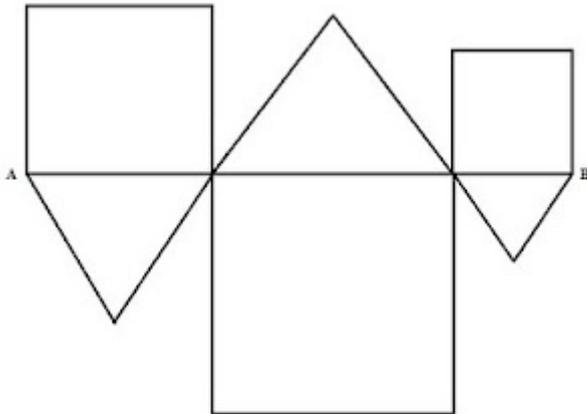


The figure below, not drawn to scale, is made up of an isosceles triangle and a rhombus. $\angle a = \angle d$, $\angle c$ is twice $\angle b$, $\angle a$ is twice $\angle e$ and $\angle b$ is greater than $\angle e$ by 48° .

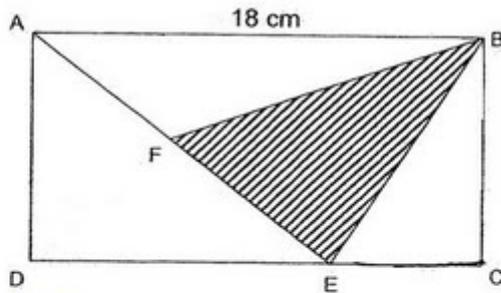
- Find the value of $\angle e$.
- Find the value of $\angle b$.



The shaded figure below is formed using 3 squares and 3 equilateral triangles. The length of the straight line AB is 15 cm. Find the perimeter of the shaded figure.



Rectangle ABCD has a perimeter of 56 cm. Given that the area of triangle ABF is 42 cm^2 and $AB = 18 \text{ cm}$, find the area of triangle BEF.



$$56 - 18 - 18 = 20$$

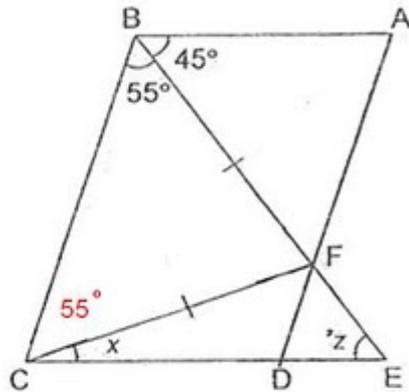
$$20 \div 2 = 10$$

$$\frac{1}{2} \times 18 \times 10 = 90$$

$$90 - 42 = 48 \text{ cm}^2$$

The area of triangle BEF is 48 cm^2 .

The figure below is not drawn to scale. ABCD is a parallelogram. CDE and BFE are straight lines. $CF = BF$, $\angle CBF = 55^\circ$ and $\angle ABF = 45^\circ$. Find the difference between $\angle z$ and $\angle x$.

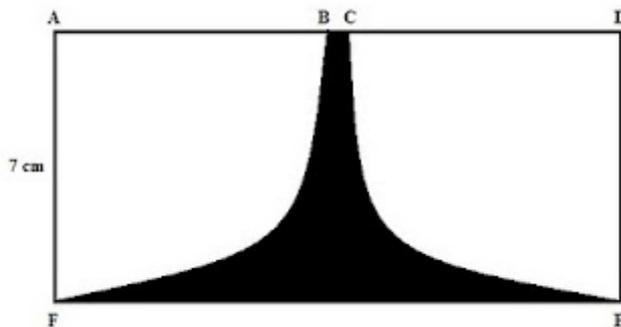


$$\angle z = 45^\circ \quad \text{Alternate angles}$$

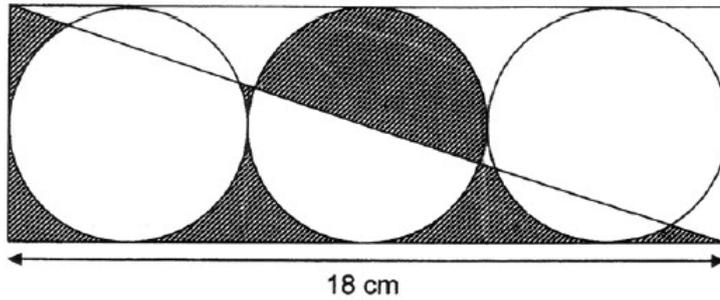
$$\begin{aligned} \angle x &= 180^\circ - 45^\circ - 55^\circ - 55^\circ && \text{Angles within parallel lines} \\ &= 25^\circ \end{aligned}$$

$$\angle z - \angle x = 45^\circ - 25^\circ = 20^\circ$$

DEF is a rectangular cardboard with $AF = 7$ cm. Two quarter circles have been cut from it as shown below. The remaining cardboard, which is the shaded part, has an area of 56 cm². Using $\pi = 22/7$, find the length of BC.



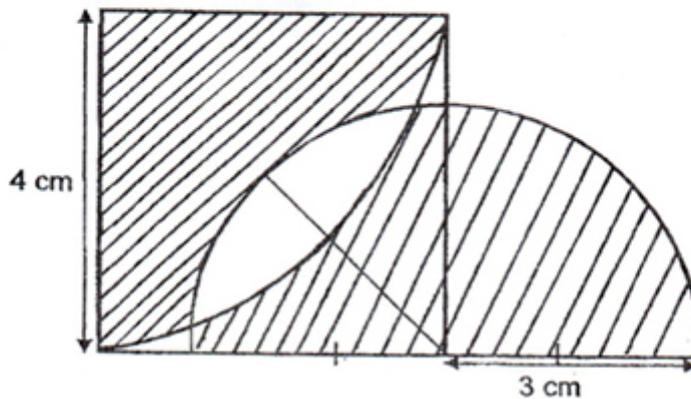
The diagram below shows 3 identical circles embedded in a rectangle.



Given that the length of the rectangle is 18 cm, find the total area of the shaded parts. Use a calculator to obtain the value of π .
(Give your answer correct to 2 decimal places.)

- 13) The figure below is made up of a square, a quadrant and a semicircle.
(Take $\pi = 3.14$)

- (a) Find the perimeter of the shaded parts.
(b) Find the difference in the area between the shaded parts.



ABCD is a square. The shaded parts X and Y are two squares with different areas. All the corners of squares X and Y lie either on the sides of square ABCD or on the line AC.

What fraction of the square ABCD is shaded?

