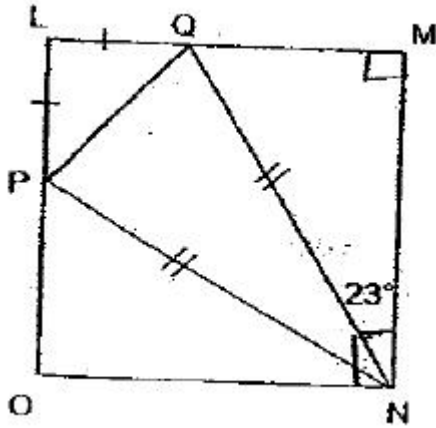--> (180 - 105) degrees divided by 2 = 37.5 degrees
(Triangle WVX is isosceles)

Answer: 37.5 degrees

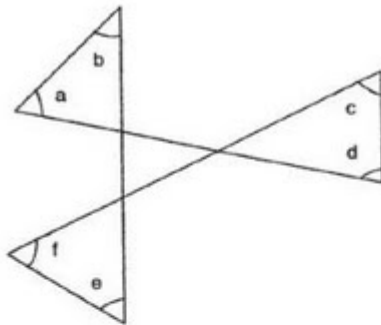**LMNO is a square. PQN and PLQ are isosceles triangles. Angle QNM is 23 degrees. Find Angle NPQ.**
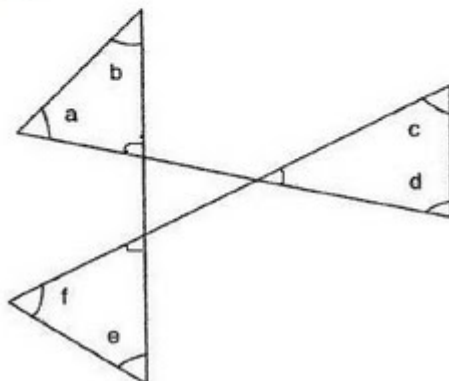

Solution

Angle PNO --> 23 deg (mirror image of Angle MNQ)
Angle OPN --> 90 deg - 23 deg = 67 deg
Angle LPQ --> 45 deg (Triangle LQP is isosceles and Angle LPQ is a rt angle)
Angle NPQ --> (180 - 45 - 67) deg = 68 deg

Answer: 68 degrees

Find the sum of the six marked angles in the diagram.

Solution

The sum of the all the angles in the triangle in the centre is 180 degrees. The sum of all the 3 angles outside the centre triangle, in the figure above is therefore also 180 degrees (opposite

angles).

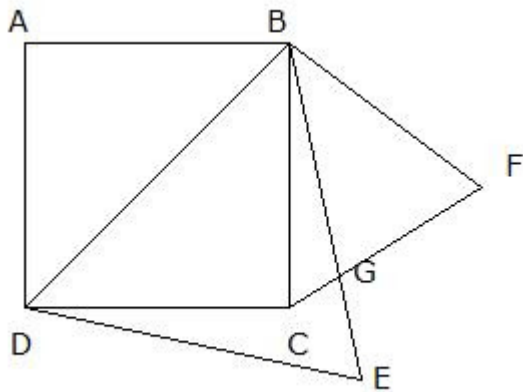The sum of all the six marked angles is hence,

Sum of marked angles in 1 triangle ----- 180 degrees
Sum of marked angles in 3 triangles ----- 180 degrees x 3 = 540 degrees
Sum of 6 marked angles ----- (540 – 180) degrees = 360 degrees

Answer: 360 degrees

In the figure not drawn to scale, ABCD is a square. BDE and BCF are equilateral triangles. What is Angle FGE?

Solution

Angle BCF ---- 60º (Triangle BCF is an equilateral triangle)

Angle CBD ---- 45º

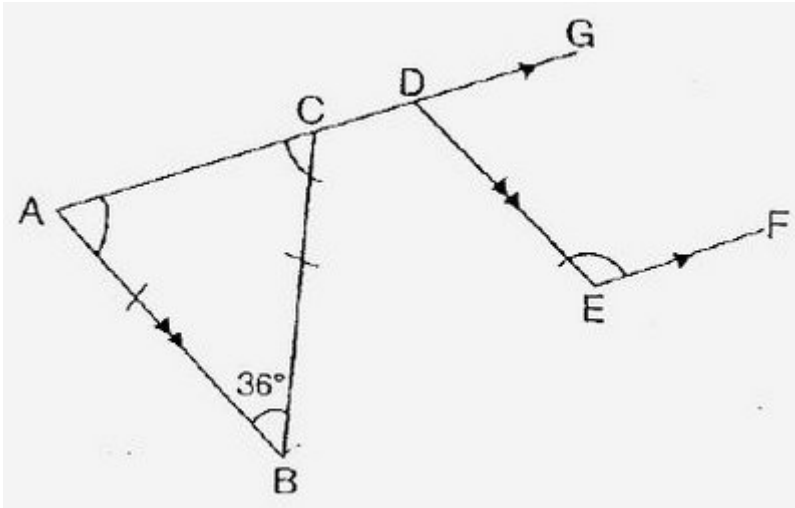Angle CBG ---- 60º - 45º = 15º

Angle BGC ---- 180º - 60º - 15º = 105º (sum of angles in a triangle)

Angle FGE ---- 105º (opposite angles)

Answer: 105º

In the figure below, AB is parallel to DE and ACDG is parallel to EF. ABC is an isosceles triangle with Angle ABC = 36 degrees. Find Angle DEF.

Solution

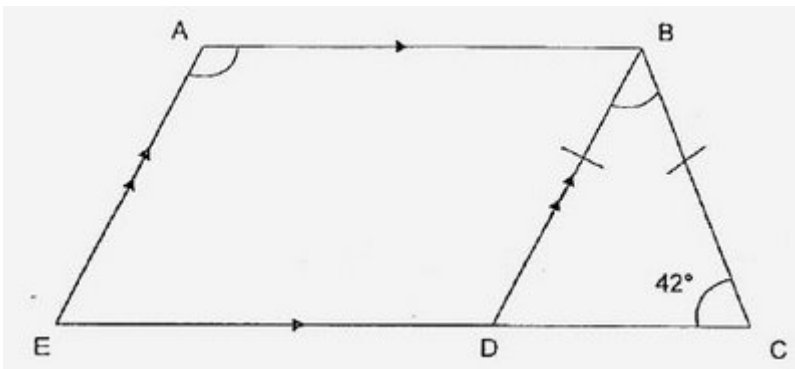Angle BAC ---- (180 – 36) degrees divided 2 = 72 degrees
Angle EDG ----- 72 degrees
Angle DEF ----- (180 – 72) degrees = **108 degrees (Answer)**

BDE is a parallelogram and BCD is an isosceles triangle. Calculate
a) Angle DBC
b) Angle EAB
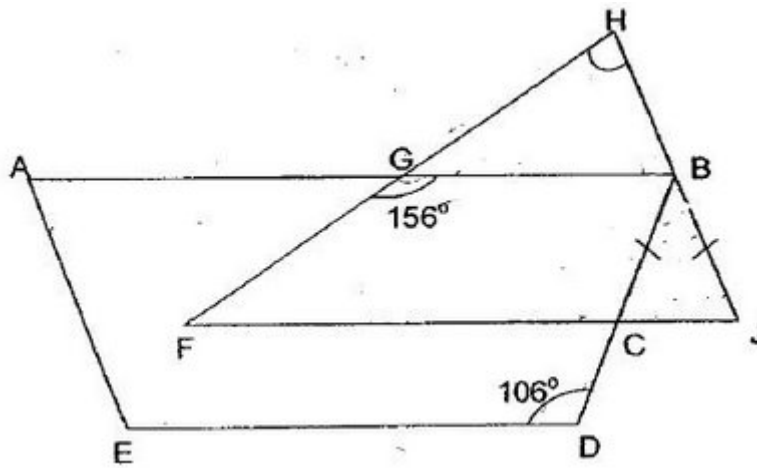**The figure below is not drawn to scale.**

Solution

a) Angle DBC ----- (180 – 42 – 42) degrees = **96 degrees (Answer)**

b) Angle EAB = Angle EDB -----
(96 + 42) degrees = **138 degrees (Answer)**

The figure below is made up of Triangle FHJ and Trapezium ABDE. Given that GB // FC and BJC is an isosceles triangle, find Angle GHB.
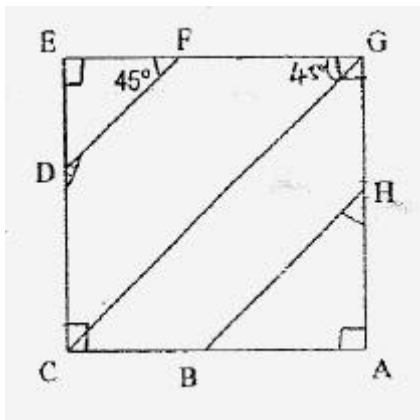
Solution

Angle BCF ----- 106 deg *
Angle BCJ ----- (180 – 106) deg = 74 deg **
Angle BJC ----- 74 deg #
Angle GBH ---- 74 deg *
Angle GHB ----- Angle BGF – Angle GBF ##
= (156 – 74) deg = **82 degrees (Answer)**

ACEG is a square, not drawn to scale. Lines DF, CG and BH are parallel lines. Angle EFD is 45 degrees. Calculate
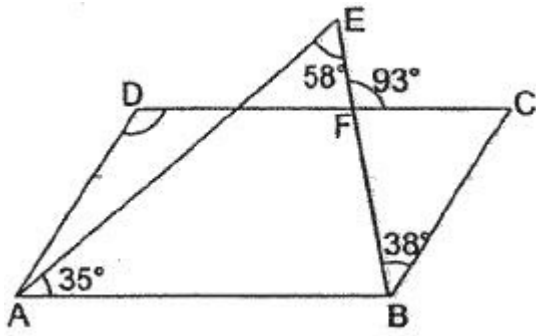**a) Angle CDF**
b) Angle AHB

Solution

a)
Angle EDF = (90 – 45) degrees
= 45 degrees

Angle CDF = (180 – 45) degrees
= **135 degrees (Answer)**

b)
Angle EFD = Angle AHB = **45 degrees (Answer)**

The figure is not drawn to scale. ABCD is a parallelogram. Find Angle ADC.

Solution

Angle AEB = (180 - 58 – 35) degrees = 87 degrees
(Angles in a triangle)

Angle ABC = (87 + 38) degrees = 125 degrees

Angle ADC = **125 degrees (Answer)**