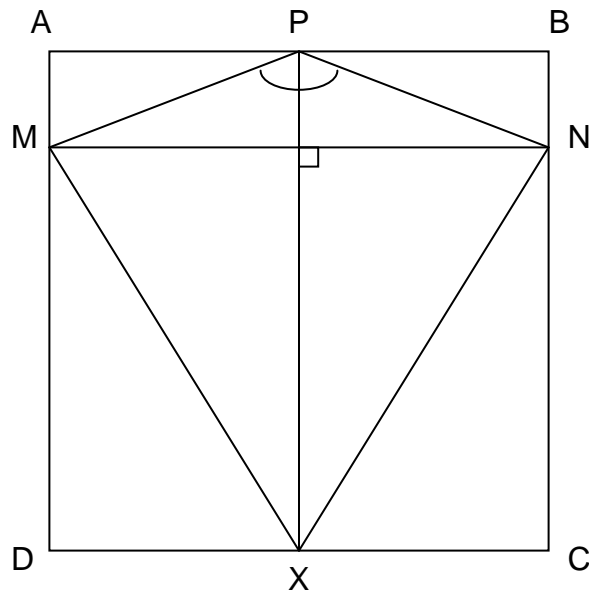


## A Maths Question, PSLE 2009

ABCD is a square. PX is perpendicular to MN.  $PX = MX = NX$   
Find  $\angle MPN$



$$PX = MX = NX \quad PX \perp MN$$

ABCD is a square.

$$PX = AD = AB = MN$$

So,  $MX = MN = NX$

Hence  $\triangle MNX$  is an equilateral triangle.

$$\angle NMX = 60^\circ$$

$$\angle MXP = 30^\circ$$

Look at  $\triangle XMP$  which is an isosceles triangle.

$$(180^\circ - 30^\circ) \div 2 = 75^\circ \rightarrow \angle MPX$$

$$2 \times 75^\circ = 150^\circ$$

Ans.  $\angle MPN = 150^\circ$