

$$S_{\triangle ABC} = \frac{1}{2} AC \cdot BH$$

$$\frac{1}{2} \cdot 12 \cdot BH = 24$$

$$BH = 4$$

$\triangle ABH$ – тик бурчтуу, $AB = 5$; $BH = 4$; $AH = 3$

$$\operatorname{tg} \angle BAH = \frac{BH}{AH} = \frac{4}{3}$$

$MN = NP = PQ = QM = x$, $x < 0 < 4$ болсун

$\triangle ANM$ – тик бурчтуу

$$AM = \frac{NM}{\operatorname{tg} \angle BAH} = \frac{x}{\frac{4}{3}} = \frac{3x}{4}$$

Тик бурчтуу $\triangle BHC$ $BH = 4$; $HC = 12 - 3 = 9$

$$\operatorname{tg} \angle ACB = \frac{BH}{HC} = \frac{4}{9}$$

Тик бурчтуу $\triangle PQC$ $PQ = QC \cdot \operatorname{tg} \angle PCQ \Leftrightarrow QC = \frac{PQ}{\operatorname{tg} \angle PQC}$

$$QC = \frac{x}{\operatorname{tg} \angle ACB} = \frac{x}{\frac{4}{9}} = \frac{9x}{4}$$

Демек, $AC = AM + MQ + QC$ болгондуктан,

теңдемени түзөбүз:

$$12 = \frac{3x}{4} + x + \frac{9x}{4} \Leftrightarrow \frac{3x + 4x + 9x}{4} = 12 \Leftrightarrow \frac{16x}{4} = 12 \Leftrightarrow x = 3$$

$$S_{MNPQ} = 3^2 = 9$$

Жообу: 9