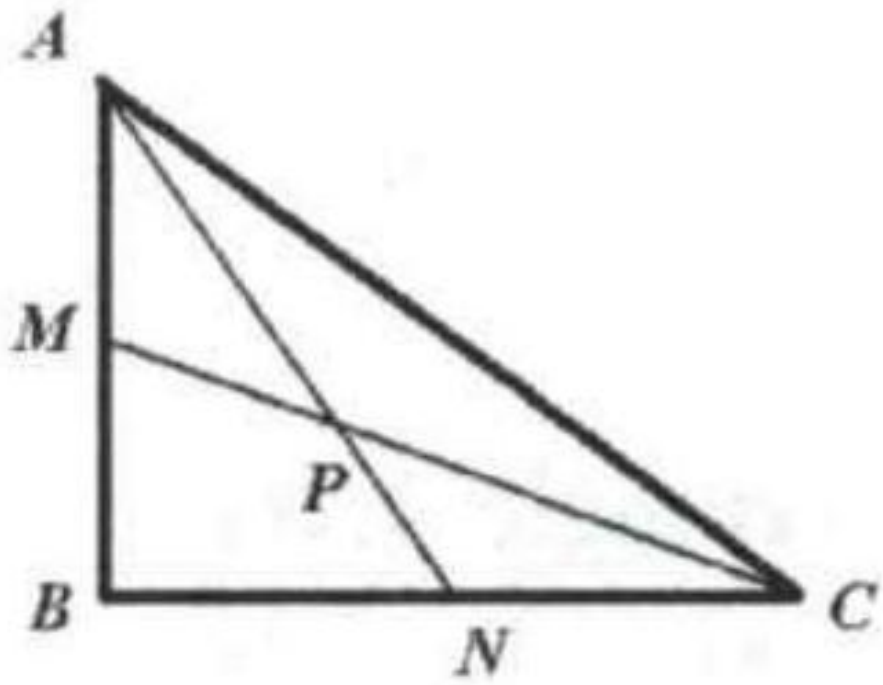
Example 2

In right triangle ABC, M and N are midpoints of legs $\overline{AB}$ and $\overline{BC}$, respectively. Leg $\overline{AB}$ is 6 units long, and leg $\overline{BC}$ is 8 units long. How many square units are in the area of $\triangle APC$? (Mathcounts Competitions)

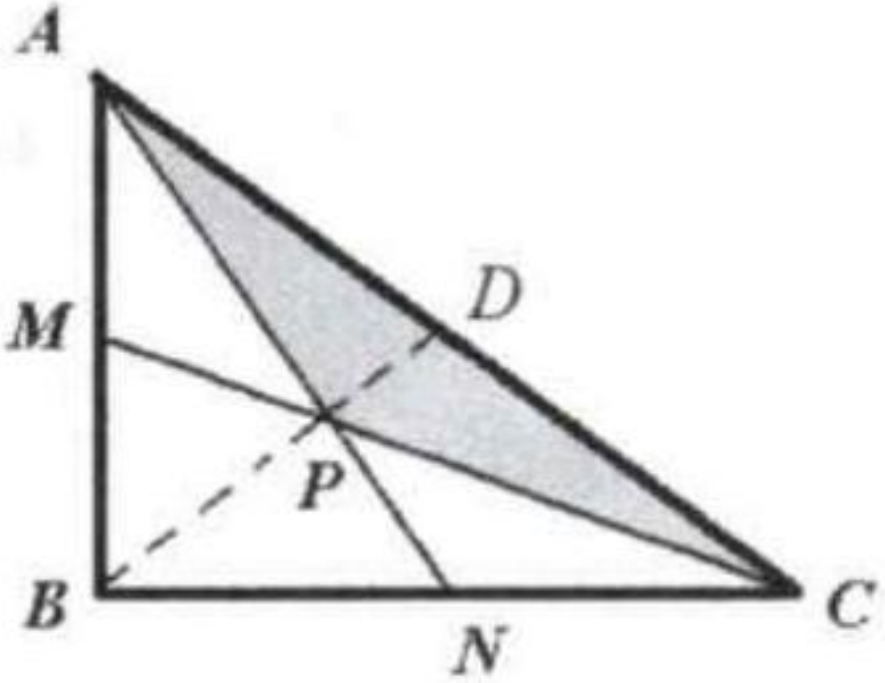
Solution: 8 (square units)



We draw the third median BD.

These three medians divide the triangle into six equal areas. The area of triangle ABC is $6 \times 8/2 = 24$.

The area of $\triangle APC$ is just $\frac{2}{6} \times 24 = 8$.


A
M
D
P
B
N
C