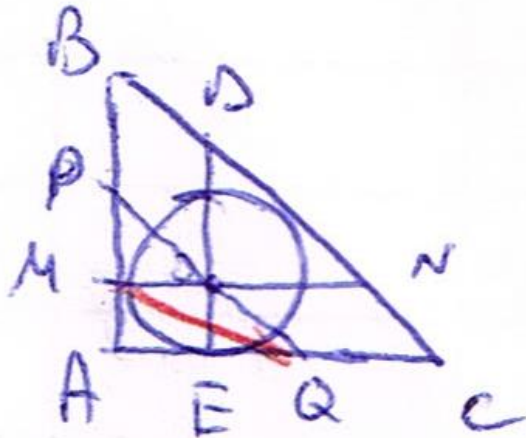


1.118
S



$$\angle A = \angle PMO = \angle OEQ$$

$$\angle B = \angle MPO$$

$$\angle C = \angle EQO$$

$$\Leftrightarrow PQ \parallel AC$$

∴

$$\triangle MPO \sim \triangle ABC \sim \triangle EQO$$

$BC = \sqrt{6^2 + 8^2} = 6 - r + 8 - r$
 $10 = 14 - 2r$
 $r = 2$

$\frac{MO}{AC} = \frac{MP}{AB} \rightarrow \frac{2}{8} = \frac{MP}{6} \rightarrow MP = \frac{3}{2}$

$\frac{EQ}{AC} = \frac{OE}{AB} \rightarrow \frac{EQ}{8} = \frac{2}{6} \rightarrow EQ = \frac{8}{3}$

$\frac{BD}{BC} = \frac{AE}{AC} \rightarrow \frac{BD}{10} = \frac{2}{8} \rightarrow BD = \frac{5}{2}$

$\frac{CN}{BN} = \frac{AM}{MB} \rightarrow \frac{CN}{10 - CN} = \frac{3}{4} \rightarrow CN = 3\frac{1}{3}$

$DN = BC - BD - CN = 10 - 3\frac{1}{3} - \frac{5}{2} = \frac{11}{6}$