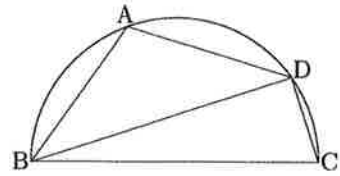


Mathematics—8

Q 2 As shown in the figure, a triangle ABD is inscribed in a semi-circle with the diameter BC, where

$$AB = 3, \quad BD = 5, \quad \tan \angle ABD = \frac{3}{4}.$$

We are to find the lengths of the three sides BC, CD and DA of the quadrangle ABCD and the area S of the quadrangle ABCD.



First, since $\cos \angle ABD = \frac{\boxed{L}}{\boxed{M}}$, we have $DA = \sqrt{\boxed{NO}}$.

Also, since $\sin \angle ABD = \frac{\boxed{P}}{\boxed{Q}}$, we have $BC = \frac{\boxed{R} \sqrt{\boxed{ST}}}{\boxed{U}}$ and thus

$CD = \frac{\boxed{V}}{\boxed{W}}$. From these we obtain

$$S = \frac{\boxed{XY}}{\boxed{Z}}.$$