Find the $x$- and $y$-components for the vector $\vec{A}$.

The magnitude of the vector $\vec{A}$ is $A = 50$ m.

The angle $\theta = 37^\circ$. Use $\cos \theta = 0.8$ and $\sin \theta = 0.6$.

(A) $A_x = 30$ m, $A_y = 40$ m
(B) $A_x = 40$ m, $A_y = 30$ m
(C) $A_x = -30$ m, $A_y = 40$ m
(D) $A_x = -40$ m, $A_y = 30$ m
(E) $A_x = -40$ m, $A_y = -30$ m

**Answer:** (B)

**Solution:**

\[
A_x = A \cos \theta = (50 \text{ m})(0.8) = 40 \text{ m}
\]
\[
A_y = A \sin \theta = (50 \text{ m})(0.6) = 30 \text{ m}
\]

Comments: Since $\vec{A}$ points in the first quadrant, both components are positive. The only viable choices are (A) and (B). Since the angle is less than $45^\circ$, the $x$-component must be larger than the $y$-component.