Triangle ABD is right-angled at B with angles BAC = p and BAD = q and lengths as shown in the diagram below.
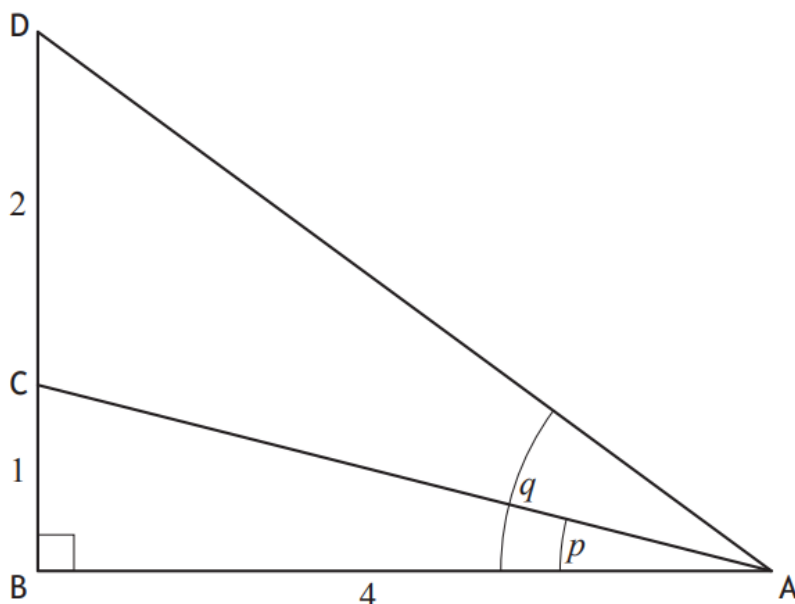
Show that the exact value of $\cos(q-p)$ is $\dfrac{19\sqrt{17}}{85}$.

5

Answer:

Proof using $\cos(A-B)$ identity. See marking instructions for details.