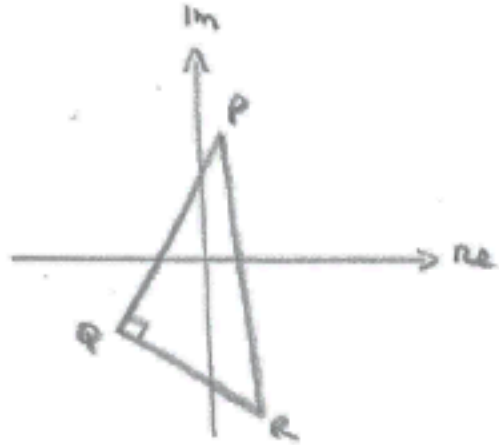# STEP/Complex Numbers Q2 (14/6/23)

The corners of a right-angled triangle are the points P, Q & R in the Argand diagram (in anti-clockwise order, with the right-angle being at Q), represented by the complex numbers $p$, $q$ & $r$.

Find an expression for $\frac{p-q}{r-q}$

## Solution

$p - q = ki(r - q)$, where $k$ is real;

so that $\frac{p-q}{r-q} = ki$

$p - q = ki(r - q)$, where $k$ is real;

so that $\frac{p-q}{r-q} = ki$