1.2.5

$p=(1,-2,4)$, $q=(3,5,2)$, $p \cdot q = 3+(-10)+8 = 1$

$|p| = \sqrt{1^2+(-2)^2+4^2} = \sqrt{21}$

$|q| = \sqrt{3^2+5^2+2^2} = \sqrt{38}$

$\text{Angle} = \cos\theta \dfrac{p \cdot q}{|p||q|} = \cos\theta \dfrac{1}{\sqrt{21}\sqrt{38}}$

$\text{Angle} \simeq 87.97^\circ$