Example
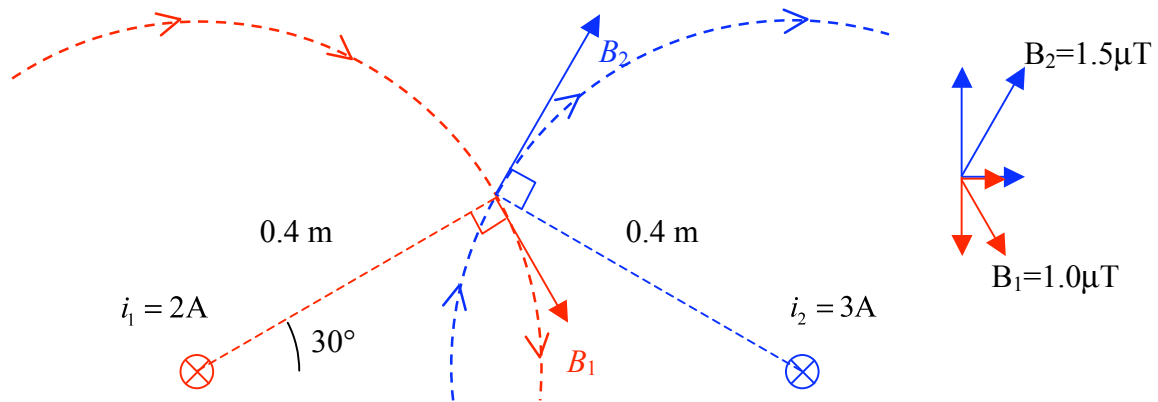
Two parallel wires with current flowing in the same direction, $i_1 = 2A$ & $i_2 = 3A$. Find the field at vertex the of 30-30-120 isosceles triangle.

Because the magnetic field is perpendicular to radii away from the wires, the angle between $\vec{B}$ and the horizontal is $90° - 30° = 60°$ (true for both $\vec{B}$ s).

x: $B_1 \cos 60° + B_2 \cos 60° = 1.25 \mu T$,   y: $-B_1 \sin 60° + B_2 \sin 60° = 2.165 \mu T$

WARNING: HRW show a similar Sample Problem 29-2, but with a 45-45-90 triangle. It is **PURE COINCIDENCE** that their B₁ and B₂ come out to be perpendicular, and therefore can be combined with the Pythagorean Theorem. Not a general result!