NAME_____   Dr. Garofalini

See due date on Website Syllabus

Given the figure below showing a few grains of the same material in a powder diffraction sample with their crystal orientations or d-spacings differently oriented, in which the planes of crystals 1 and 2 have the same d spacing ($d_1=d_2$) and are at the orientations shown, with crystal 3 having different (hkl) planes oriented as shown, with those (hkl) having a different d spacing ($d_3 \neq d_1$), with the x-rays impinging on the sample as shown, show how XRD works at giving an x-ray diffraction pattern in which the peaks from the different (hkl) planes occur at the appropriate 2θ. Provide a very clear written answer (if hand-written, make sure your writing is easily readable (and not just by you).