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Ph	ysics 111 Quiz #7, November 12, 2021
	ease show all work, thoughts and/or reasoning in order to receive partial credit. The quiz is orth 10 points total.
	I affirm that I have carried out my academic endeavors with full academic honesty.
wa	certain metal is first illuminated with light of wavelength $\lambda_1 = 350nm$ and then by light with evelength $\lambda_2 = 540nm$. In both cases, electrons are ejected from the metal's surface and the speed of ejected electrons differs by a factor of 2 in the two cases.
1.	What is the ratio of the kinetic energies K_1 and K_2 ?
2.	What is the work function of the metal in eV ?
3.	What is the maximum wavelength (in nm) that will produce photoelectrons?

4.	Suppose tungsten x-rays are used in a Compton effect experiment with an energy 69.3182keV. Electrons are observed to recoil with a speed of $v = 0.2c$. What is the energy of the scattered x-rays?
5.	At what angle (with respect to the direction of the incident x-rays) was the x-ray detector placed to detect the scattered x-rays?