

NANO 703/703L - Quiz 1

1) Identify the following statements as true or false (T/F):

Additional justification may be added to clarify your answer.

- a) ___ *TEM* stands for “translation electron microscopy”.
- b) ___ A convenient unit of energy for electrons is *electron volts* ($1 \text{ eV} = 1.602 \times 10^{-19} \text{ J}$).
- c) ___ To use the small-angle approximation, the angle must be expressed in *degrees*.
- d) ___ An electron's wavelength *decreases* when its kinetic energy is increased.
- e) ___ Kinetic energy is conserved in an *elastic* scattering event.
- f) ___ The preferred unit used for scattering cross section is *sheds* ($1 \text{ sh} = 10^{-18} \text{ cm}^2$).
- g) ___ The invention of the *electron* microscope by van Leeuwenhoek inspired Einstein to invent the *optical* microscope over 200 years later.