

PHYS1303 READING QUIZ 1

1. Complete the following statement: The standard meter is defined in terms of the speed of light because

- a) all scientists have access to sunlight.
- b) no agreement could be reached on a standard meter stick.
- c) the yard is defined in terms of the speed of sound in air.
- d) the normal meter is defined with respect to the circumference of the earth.
- e) it is a universal constant.

2. How is the standard unit of time, the “second,” defined in the International System of Units?

- a) using the frequency of the light emitted from the ideal gas krypton
- b) using a standard pendulum that has a length of exactly one standard meter
- c) using a portion of the time for a single rotation of the Earth
- d) using a high precision telescope to measure the light coming from the most distant objects in the Universe
- e) using the frequency of the light emitted from cesium atoms

3. Which one of the following statements concerning unit conversion is false?

- a) Units can be treated as algebraic quantities.
- b) Units have no numerical significance, so 1.00 kilogram = 1.00 slug.
- c) For a quantity of given dimension, the units are not unique.
- d) Quantities with different units can be multiplied or divided.
- e) Only quantities with the same units can be added or subtracted.

4. Which one of the following pairs of units may not be added together, even after the appropriate unit conversions have been made?

- a) feet and centimeters
- b) seconds and kilometers
- c) meters and miles
- d) grams and kilograms
- e) hours and years

5. If one inch is equal to 2.54 cm, express 9.68 inches in meters.

- a) 0.262 m
- b) 0.0381 m
- c) 0.0508 m
- d) 0.114 m
- e) 0.246 m