

Wow- Another Great Review

Chpt. 3 rev 1

Hint: light and sound travel at a constant velocity

Vel. of light = 3.0×10^8 m/s Vel. of sound = 340 m/s
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1. A runner runs from the +15 m position to the -2.0 m position in 5.0 s. What is his/her velocity?
2. An arrow is shot at 145 m/s. a) How long does it take to go 45.0 m?...b) What is its speed in km/hr?
3. You are a timer of a race and standing 100.0 m away from the starting pistol. You hear the gun 0.294 seconds after you see smoke. How fast does the sound travel?
4. How fast does light travel if it goes 1.50×10^{11} m in 498 seconds?
5. How far does light go in one year? (that would be a light year)
6. How far away is the moon if it only takes light 1.3 seconds to reach us?
7. How long does it take the light to travel the 100.0 m distance in problem # 3?
8. The bullet from a gun travels at 315 m/s. How far does it go in 0.520 seconds?
9. A bullet goes from rest to 455 m/s in 4.84×10^{-3} s. What is the acceleration of the bullet in the gun? How long is the barrel?
10. You drop a rock from a cliff and it hits the ground after 3.0 seconds. How fast is it going?...How far did it fall?
11. What is the absolute and relative Error of the speed of sound from #3 if the accepted value is 343 m/s?