1. A person observes the smoke from a gun 1.4 sec before he hears the bang. If the gun is 476m away from the person, find the speed of sound?

2. A person standing near the cliff fires the gun and heared the echo after 1.5 sec. If the speed of sound in air is 340m/sec, how far is person from the cliff?

3. A sound wave of frequency 5000 Hz travel in air with speed of 350m/sec. Calculate the wave length.

4. If u hear thunder 7 sec after u see the lightening, how far u from the lighting occurred?

5. A bat emits ultrasonic wave of frequency 30 KHz. If its speed is 350m/s and bats hear its echo after 0.6 sec after emitting the, find how far is bat from obstacle and wave length of wave?

6. Meera is standing between two hills. She shouted loudly and hears first echo after 0.5 sec and second echo after 1 sec. what is distance between two hills? 7. If 2000 ripples produced in 5 sec in a pond find time period and frequency of ripples formation.

7. A man standing in a valley between two parallel mountains fires a gun and hears echo at an interval of 2 s and 3.5s. What is a) the distance between two mountains b) the location of the man with respect to the mountain?

8. Calculate the wavelength of a sound whose frequency is 220 Hz and speed is 440 in a given medium.

9. A body is vibrating 6000 times is 1 minute. If the velocity of sound in air is 360 m/s, find (i) Frequency in Hz (ii) wavelength of sound.

10. A stone is dropped from a 500 m tall building into a pond. When is sound splash heard? Given g=10 m/s^2, speed of sound = 340 m/s.

11. An echo is heard in 3 sec after the emission of sound. If speed of sound in air is 342 m/s, what is the distance of the reflecting surface from the source?

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22. What is the volume of 0.235 mol of $B_2H_6(g)$ at STP?

23. Sulfuric acid is an important lab reagent. Calculate the molar concentration of a battery acid solution that contains 9.25 mol of H_2SO_4 dissolved to form 1.80 L of solution

24. What is the volume of 6.98×10^{15} atoms of Xe (g) at STP?

25. Since a saturated solution of calcium chloride does not freeze until -55^0C, calcium chloride can be used to melt ice on roads and walks. What is the molar concentration of a saturated solution in which 3976 g of $CaCl_2$ is dissolved in water to form 5.00 L of solution?

26. Calculate the number of atoms of K in 40.0 g.

27. What is the mass of 2.75 L of CO_2 (g) at STP?

28. What is the volume of 2.0×10^3 molecules of CO at STP?

29. What is the mass required for you to prepare a 0.10 M solution of Ca $(NO_3)_2$?

30. What is the concentration of a solution when 0.25 g of Na2SO4 is dissolved in 0.2500 L?

31. In a chemical reaction, 0.250 moles of HNO_3 is necessary. What volume of a 2.0 M solution of HNO_3 do you need to use in this chemical reaction?

32. A student holds a 15 kg bowling ball 1.5 m above the ground for 15 s. How much work is done on the ball?

33. A block of wood is pushed at a constant velocity with a force of 25.0 N. How far did it travel if 100.0 J of work are done on it?

34. A 2.0 kg textbook is picked up off the floor and placed on a 0.95 m high desk. How much work is down on the book?

35. A 1200 kg car traveling at 60.0 km/h hits the brakes and comes to a stop in 32 m. How much work is done on the car?

36. How much potential energy does a 12.0 kg bowling ball have if it is sitting on a 0.50 m high chair?

37. A 7.5 kg bowling ball sits on a 1.10 m desk. If a student lifts the ball 0.90 m above the desk, how much potential energy does it have with respect to the desk?

38. How much kinetic energy does a 50.0 g bullet traveling at 365 m/s have?

39. If a 78 kg cheetah is running at a speed of 120 km/h, how much kinetic energy does it have?

40. A 3.91 N baseball has 775 J of kinetic energy. How fast is it moving?

41. A 0.425 kg water balloon is dropped from the top of a school gymnasium onto some unsuspecting physics students (those were the days…). If the gym is 8.50 m high how much kinetic energy does it have just before it hits the ground?

42. A 12.0 kg block is pushed up an 8.0 m ramp at a constant speed of 2.50 m/s with a force of 28.0 N. How much power does this require?

43. A 25.0 kg crate it lifted on to a 2.0 m ledge by a worker that exerts 325 W of power. How long does it take to reach the ledge?

44. A 0.390 kg hockey puck is accelerated across a frictionless sheet of ice from rest to a speed of 15.0 m/s in 1.5 m. How much power is exerted on the puck?

45. A 5.0 kg box is sliding across the floor at 2.00 m/s when it is accelerated to 8.00 m/s in 1.80 s. If the coefficient of friction is 0.220 how much power is required to accelerate the box?