1. A vector is a quantity that has magnitude and direction. (Definition)

2. D=Vavet =(75 m/s)(2s)= 150 m

3. A volleyball player jumps up to spike a ball. Once her feet are off the floor, the player’s acceleration equals “g” directed downward.

4. T=V/A =(52 m/s)/(4 m/s/s)= 13 sec

5. D=1/2gt2 =1/2(10m/s/s)(.4s)2 =.8 m

6. both the same, Galileo’s Law of Falling Bodies

7. True or False - Physics is the most basic science because it is all about the nature of basic things like forces, energy, and motion, the ideas of physics extend into more complex sciences, underneath biology is chemistry and underneath chemistry is physics, and you can better understand science in general if you understand physics.

8. g and downward-gravity causes the acceleration and gravity always works downward.

9. A=V/t =(45 m/s)/ 9 s =5 m/s/s

10. Vave=d/t =600 km/8 hrs =75 km/hr

11. about 10 m/s/s-Gravity causing the acceleration is always about 10 m/s/s

12. The horizontal component of a projectile’s velocity and the vertical component of the velocity are independent of each other. (definition)

13. When you look at the speedometer in a moving car, you can see the instantaneous speed?-Defintion

14. 70 degrees-Complementary angles (add to 90) have the same horizontal range

15. Speed is always measured in terms of a unit of distance divided by a unit of time, a measure of how fast something is moving, and the distance covered per unit of time.

16. about 10

17. c=Square root (x2 + y2) =Square root (52 + 122)= =a 13- unit vector

18. To test a scientific hypothesis, you would set up many experiments and look at the results

19. Acceleration is defined as the CHANGE in the velocity divided by the time interval

20. The penny, because the feather will encounter air resistance.

21. In the absence of air resistance, objects fall at a constant acceleration? Galileo’s Law of Falling Bodies

22. v=gt =(10 m/s/s) (8 Sec) =80 m/s

23. A scalar is a quantity that has magnitude only.

24. The following steps are a part of the Scientific method-

a. recognize the problem

b. make a guess about the answer and predict its consequences (hypothesis)

c. predict the consequences of the hypothesis

d. perform experiments to test the predictions

e. formulate a general rule based on the predictions and experimental outcome

25. Anything that is moving through space that is affected only by gravity

26. The two measurements necessary for calculating average speed are distance and time

27. Vave=d/t =80 km/2hrs =40 km/hr

28. zero, Galileo’s law of inertia

29. While an object near the earth’s surface is in free fall, its velocity increases.

30. The same time, because of Galileo’s Law of Falling Bodies