**Unit 3 – Worksheet 1**

**Constant Acceleration Problems**

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| 1. A poorly tuned Geo Metro can accelerate from rest to a speed of 28 m/s in 20 s.    1. What is the average acceleration of the car?    2. What distance does it travel in this time? |  |
| 1. At *t* = 0, a car has a speed of 30 m/s. At *t* = 6 s, its speed is 14 m/s. What is its average acceleration during this time interval? |  |
| 1. A bear spies some honey and takes off from rest, accelerating at a rate of 2.0 m/s2. If the bear runs for 4 seconds before reaching the honey, how far away was the hive? |  |
| 1. A bus moving at 20 m/s (t = 0) slows at a rate of 4 m/s each second.    1. How long does it take the bus to stop?    2. How far does it travel while braking? |  |
| 1. A physics student skis down a hill, accelerating at a constant 2.0 m/s2. If it takes her 15 seconds to reach the bottom, what is the length of her trop down the side of the mountain? |  |
| 1. A dog runs down his driveway with an initial speed of 5 m/s for 8 s, then uniformly increases his speed to 10 m/s in 5 s.    1. What was his acceleration during the 2nd part of the motion?    2. How long is the driveway? |  |
| 1. A mountain goat starts a rock slide and the rocks crash 100 m down the slope. If the rocks reach the bottom in 5 s, what is their acceleration? |  |
| 1. A car whose initial speed is 30 m/s slows uniformly to 10 m/s in 5 seconds.    1. Determine the acceleration of the car.    2. Determine the distance it travels in the 3rd second (from *t* = 2 s to *t* = 3 s). |  |