***Acceleration Practice problems***

**SHOW 3 LINES OF WORKING – Formula, substitution of values from the Q, answer with units!!!!**

**Equations:**

**Standard Calculating Acceleration Qs**

1. Calculate the acceleration of Josh riding his bicycle in a straight line that speeds up from 4 m/s to 6 m/s in 5 seconds.
2. Ariel dropped a golf ball from her second story window. The ball starts from rest and hits the sidewalk 1.5 s later with a velocity of 14.7 m/s. Find the average acceleration of the golf ball.
3. Cody’s car accelerates from 0m/s to 45 m/s northward in 15 seconds. What is the acceleration of the car?
4. Dean is slowing down on his skateboards. He starts at a speed of 5.5 m/s and slows to 1.0 m/s over a time of 3.0 seconds. What is Dean’s acceleration?
5. A fish swimming at a constant speed of 0.5 m/s suddenly notices a shark appear behind it. Five seconds later, the fish is swimming in the same direction at a speed of 2.5 m/s. Calculate the fish’s acceleration?

**Variations – Calculating time or velocity using acceleration**

1. Jesse is travelling with a velocity of 13.5 m/s. He applies the brakes and accelerates at -2.50 m/s2 to bring his bicycle to a complete stop. How long did this take?
2. Kaya is riding her dirt bike eastward on a dirt road. She spots a jump ahead. Kaya accelerates her bike from 5.5 m/s to 14.0 m/s at 3.2 m/s/s. How long does it take her to accelerate?
3. The elevators in the Landmark Tower, in Yokohama, Japan are among the fastest in the world. They accelerate upward at 3.125 m/s2 for 4.0 s to reach their final speed. If these elevators start from rest, what is their final speed?
4. Justine is ice-skating at the Lloyd Center. She accelerates at a rate of 0.8 m/s/s for 3.5 seconds to reach a speed of 5 m/s. What was her initial velocity?