

Power Tool Classwork

Name: _____

Use GUESS and circle your final answers.

1-1 The highest speed achieved by a standard non-racing sports car is just over 200 miles/hour. Assuming that the car accelerates from rest at 4.00 m/s^2 and reaches its maximum speed after traveling 1,181 m, how much time would it take this car to reach its maximum speed?

1-2 A US Naval hovercraft *can* move as fast as 47 m/s! Suppose that during a particular training exercise the ship accelerates at $+2.67 \text{ m/s}^2$, so that after 15.0 s its displacement is $+6.00 \times 10^2 \text{ m}$. Using a single formula, calculate the ship's initial velocity just before the acceleration.

2-1 With a cruising speed of 639 m/s (nearly twice the speed of sound) the French supersonic passenger jet Concorde was the fastest commercial airplane until its retirement in 2003. Suppose the landing speed of the Concorde was 20 percent of its cruising speed. If the plane accelerates at -5.80 m/s^2 , how far does it travel between the time it lands and the time it comes to a complete stop?

2-2 The skid marks left by the slowing jet-powered car *The Spirit of America* were 9.60 km long. If the car's acceleration was -2.00 m/s^2 , what was the car's initial velocity?