Power Tool Classwork   **Name:**_____

Use <u>GUESS</u> and <u>circle your final answers</u>.
 Be sure your answer is rounded to the correct number of <u>significant figures</u>
   and includes a measurement <u>unit</u>.

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? (Hint: You don't need the final speed so don't bother converting it.)

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 m/s^2, so that after 15.0 s its displacement is
       +6.00 x 10^2 m. Using a single formula, calculate the ships initial velocity just before the
       acceleration. (Hint: You don't know the hovercraft's *actual* final speed & don't need it.)

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? (Hint: It's landing speed is its initial speed since the puzzle is about the Concorde stopping once on the ground.)

2-2   The skid marks left by the slowing jet-powered car *The Spirit of America* were 9.60 km long after it came to a stop. If the car's acceleration was -2.00 m/s^2, what was the car's initial velocity? (Hint: Convert quantities so that they use the same unit of distance-meters.)