$V_i V_f$Dat Problems is Where It's At

1. A bobsled has a constant acceleration of 4.0 m/s^2 starting from rest.
    a. After 5.00 seconds how far has it gone?

    $V_i =$

    $V_f =$

    $d =$

    $a =$

    b. After 5.00 seconds how fast is it traveling?

    $t =$

    c. What is the average velocity during the first 5.00 seconds?

$V_i =$

$V_f =$

    d. How far has it traveled by the time its velocity is 40.0 m/s?

$d =$

$a =$

$t =$

2. A Porsche, initially traveling at a uniform velocity, accelerates at a rate of 12 m/s^2 for a period of 5.0 seconds. If the car traveled 200.0 m during this 5.0 s period, what was the velocity of the Porsche before it started to accelerate?

    $V_i =$
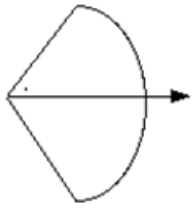
    $V_f =$

    $d =$

    $a =$

    $t =$

3. An arrow, after being pulled back, was accelerated over a distance of 0.8 m in the bow. If its speed at the moment it left the bow was 60.0 m/s what is the acceleration imparted by the bow? (Hint: Look at the picture below. The arrow is going from the left bow picture to the right one).
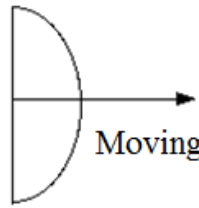
Moving

Not Moving

$V_i =$

$V_f =$

$d =$

$a =$

$t =$

4. A train started from rest and moved with a constant acceleration. At one time, it was traveling 10. m/s. 50. m further down the track it was going 16 m/s.

   a. Calculate the acceleration.

$V_i =$

$V_f =$

$d =$

$a =$

$t =$

   b. Find the time required to travel the 50 m mentioned.

   c. Find the time required to reach 10 m/s from rest.

$V_i =$

$V_f =$

$d =$

$a =$

   d. Find the distance the train moved in going from rest to 10 m/s.

$t =$

5. A 16-year-old new driver is cruising at 90. m/s along a straight road when he sees a 60. m/s speed limit sign. He slows down at a constant rate and 1.5 s later reaches the sign going 80 m/s.

a. What is the car's acceleration?

$V_i =$

$V_f =$

$d =$

b. How far after the sign, does he travel before his velocity is at the legal speed limit?

$a =$

$t =$