Acceleration Problems Review Sheet

1. A car constantly accelerates from rest, covering 150 meters in 10 seconds.
   a. What was its average speed for this interval?

   b. What was its final speed?

   c. What was its acceleration?

2. Starting from rest, a rocket has a constant acceleration of 15 m/s^2 for 30 seconds.
   a. What is its final speed?

   b. What was its average speed over this time?

   c. How far did it travel?

3. A friend is rolling down a hill on a skateboard. Starting from rest, they roll to a final speed of 12 m/s in 4 seconds.
   a. What was the average speed of your friend?

   b. What was the acceleration of your friend?

   c. How far did your friend travel?

4. A car accelerates from rest to a speed of 30 m/s in a distance of 250 m.
   a. What was the average speed of the car?

   b. How long did this take?

   c. What was the acceleration of the car?

5. A sprinter accelerates from rest and covers 5 meters in only 2 seconds.
   a. What was the average speed for this interval?

   b. What was the final speed?

   c. What was the acceleration?

6. A dragster starts from rest and has a constant acceleration of 7 m/s^2 for 8 seconds.
   a. What is its final speed?

   b. What was its average speed over this time?

   c. How far did it travel?

7. Starting from rest, a plane accelerates to a final speed of 100 m/s in 25 seconds.
   a. What was the average speed of the plane?

   b. What was the acceleration of the plane?

   c. How far did the plane travel?

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8. A car accelerates from 20 m/s to 35 m/s in a time of 10 seconds.
   a. What was the average speed of the car?

   b. What was the acceleration of the car?

   c. How far did the car travel?

9. Another car slows down from a speed of 32 m/s to a speed of 8 m/s in a time of 12 seconds.
   a. What was the average speed of the car?

   b. What was the acceleration of the car?

   c. How far did the car travel?

10. A bicyclist traveling at 20 m/s stops in a distance of 120 meters.
    a. What was the average speed of the bicyclist?

    b. How many seconds did this take?

    c. What was the acceleration of the bicyclist?

11. A ball has some initial speed. It slows down and comes to a stop in a distance of 23 meters and a time of 6 seconds.
    a. What was the average speed of the ball?

    b. What was the initial speed of the ball?

    c. What was the acceleration of the ball?

Answers:

1. a) 15 m/s	*b) 30 m/s*	*c) 3 m/s^2*	*2. a) 450 m/s*	*b) 225 m/s*	*c) 6750 m*
3. a) 6 m/s	*b) 3 m/s^2*	*c) 24 m*	*4. a) 15 m/s*	*b) 16.7 s*	*c) 1.8 m/s^2*
5. a) 2.5 m/s	*b) 5 m/s*	*c) 2.5 m/s^2*	*6. a) 56 m/s*	*b) 28 m/s*	*c) 224 m*
7. a) 50 m/s	*b) 4 m/s^2*	*c) 1250 m*	*8. a) 27.5 m/s*	*b) 1.5 m/s^2*	*c) 275 m*
9. a) 20 m/s	*b) –2 m/s^2*	*c) 240 m*	*10.a) 10 m/s*	*b) 12 s*	*c) –1.67 m/s^2*
11.a) 3.83 m/s	*b) 7.67 m/s*	*c) –1.28 m/s^2*			