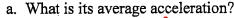
PHYSICS UNIT 1 PRACTICE PROBLEMS

- 1. A race car's velocity increases from 4 m/s to 88 m/s over a 4 sec time interval.
 - a. What is its average acceleration?
 - b. How far does the car travel during this time?

2. The car in problem #1 decelerates from 88 m/s to 20 m/s in 3 sec.

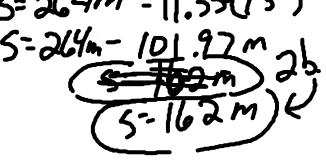


b. Over what distance does it travel during this time?

3. A car accelerates from rest at 7 m/s² to a velocity of 50 m/s. 5= 264m

a. How long does it take?

b. How far does the car travel in this time?



- 4. A bike rider accelerates uniformly at 2.4 m/s² to a velocity of 13 m/s. If the bike moved 14 m during this acceleration, calculate the bike's initial velocity.
- 5. A drag racer accelerates uniformly from rest, traveling 400 meters in 6.5 seconds. What is the car's average and final velocity?

- 6. An airplane starts from rest and accelerates uniformly for 30 seconds down a 1400 meter runway before leaving the ground.
 - a. What is its acceleration?
 - b. How fast was it moving when it took off?
- 7. A rock, starting from rest, takes 7.5 sec to fall from a height to the ground.

 a. Calculate the distance it fell.

 b. Calculate its final velocity just before it lands.
- 8. A brick is dropped from rest from a high scaffold that is 180 meters above the ground.
 - a. How long does it take for the brick to fall?
 - b. What is its velocity after this period of time?