

Name _____

Acceleration BookWork Section 2-2 (odds academic, all honors.. check book for answers!)

$$D = V_{\text{avg}} * T \quad V_{\text{avg}} = (V_i + V_f) / 2 \quad A = (V_f - V_i) / T$$

Pg 49

1) When the shuttle bus comes to a sudden stop to avoid hitting the dog, it slows from 9 m/s to 0 m/s in 1.5 s. Find the average acceleration of the bus.

2) A car traveling initially at 7 m/s accelerates to a velocity of 12 m/s in 2 s. What is the average acceleration of the car?

3) Turner's treadmill starts with a velocity of -1.2 m/s and speeds up at regular intervals during a half hour workout. After 25 min, the treadmill has a velocity of -6.5 m/s . What is the average acceleration of the treadmill during this period?

4) If a treadmill starts at a velocity of -2.7 m/s and has a velocity of -1.3 m/s after 5 min, what is the average acceleration of the treadmill?

5) With an average acceleration of -0.5 m/s^2 , how long will it take a cyclist to bring a bicycle with an initial velocity of 13.5 m/s to a complete stop?

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Pg 53

- 1) A car accelerates uniformly from rest to a speed of 23.7 km/hr in 6.5 sec. Find the distance the car travels during this time.

- 2) When Maggie applies the brakes of her car, the car slows uniformly from 15 m/s to 0 m/s in 2.5 sec. How many meters before a stop sign must she apply her brakes in order to stop at the sign?

- 3) A jet plane lands with a velocity of 100 m/s and can accelerate at a maximum rate of -5.0 m/s^2 as it comes to rest. Can this plane land at an airport where the runway is 0.8 km long?

- 4) A driver in a car traveling at a speed of 78 km/hr sees a cat 100 m away on the road. How long will it take for the car to accelerate constantly to a stop in exactly 99 m?

- 5) A car enters the freeway with a speed of 23 km/hr and accelerates to a speed of 86 km/hr in 3.5 min. How far does the car move while accelerating?