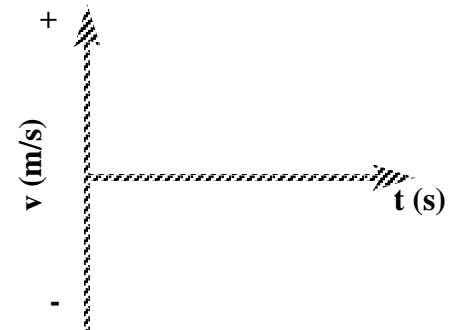
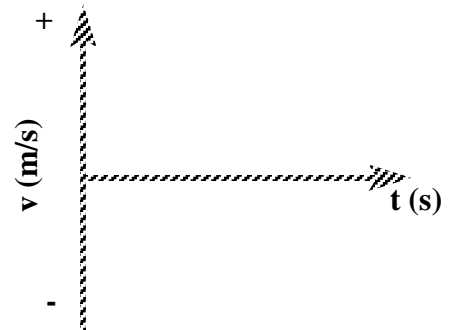


UNIT III: Worksheet 4

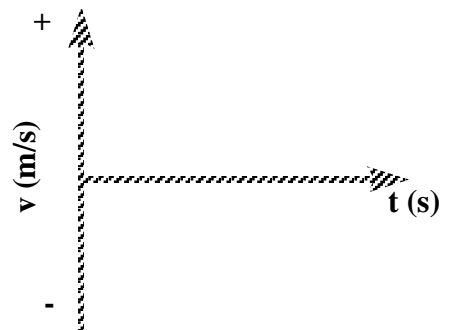
- A poorly tuned Geo Metro can accelerate from rest to a speed of 28 m/s in 20 s.
 - What is the average acceleration of the car?
 - What distance does it travel in this time?



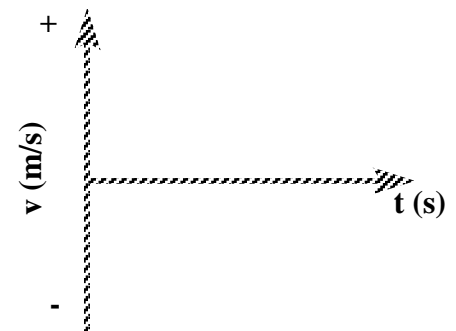
- At $t = 0$ a car has a speed of 30 m/s. At $t = 6$ s, its speed is 14 m/s. What is its average acceleration during this time interval?



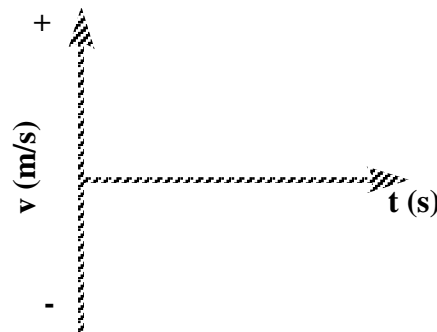
- A bear spies some honey and takes off from rest, accelerating at a rate of 2.0 m/s^2 . If the honey is 16 m away, how fast will his snout be going when it reaches the treat?



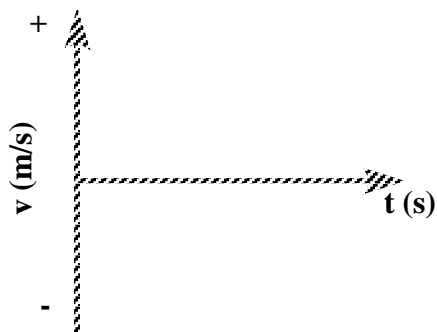
- A bus moving at 20 m/s ($t = 0$) slows at a rate of 4 m/s each second.
 - How long does it take the bus to stop?
 - How far does it travel while braking?



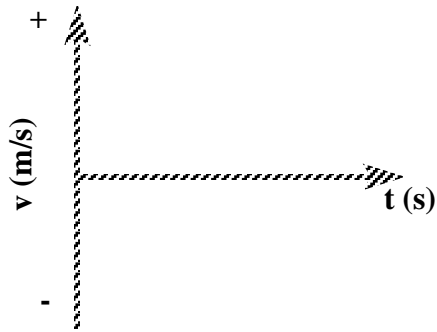
5. A physics student skis down a hill, accelerating at a constant 2.0 m/s^2 .
If it takes her 15 s to reach the bottom, what is the length of the slope?



6. A dog runs down his driveway with an initial speed of 5 m/s for 8 s, then uniformly increases his speed to 10 m/s in 5 s.
a) What was his acceleration during the 2nd part of the motion?
b) How long is the driveway?



7. A mountain goat starts a rock slide and the rocks crash down the slope 100 m.
If the rocks reach the bottom in 5 s, what is their acceleration?



8. A car whose initial speed is 30 m/s slows uniformly to 10 m/s in 5 seconds.
a) Determine the acceleration of the car.
b) Determine the distance it travels in the 3rd second ($t = 2\text{s}$ to $t = 3\text{s}$).

