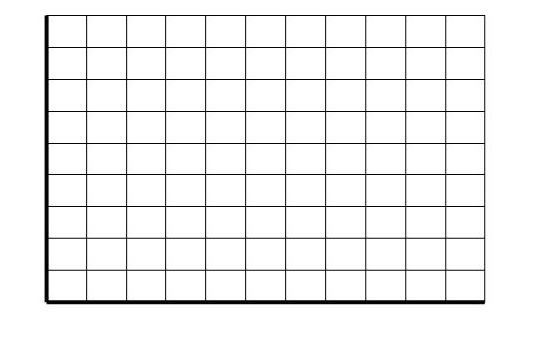
**Unit 3 - Worksheet 3: Practice Problems**

**Uniform Acceleration**



Velocity (m/s)

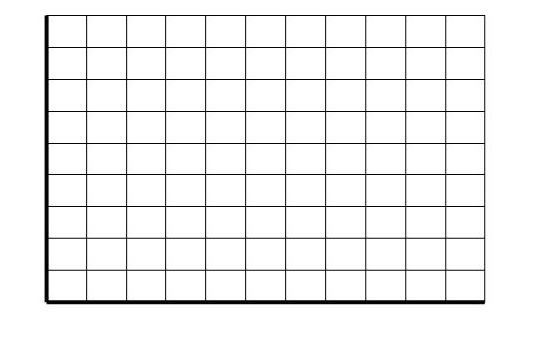
Time (s)

1. A poorly tuned Geo Metro can accelerate from rest to a speed of 28 m/s in 20 s.

a) What is the average acceleration of the car?

b) What distance does it travel in this time?

2. At t = 0, a car has a speed of 30 m/s.

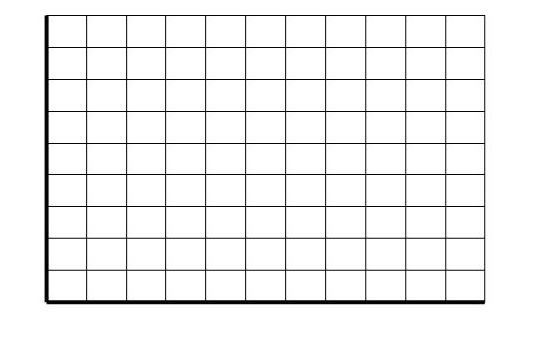


Velocity (m/s)

Time (s)

At t = 6 s, its speed is 14 m/s.

What is its average acceleration during this time interval?

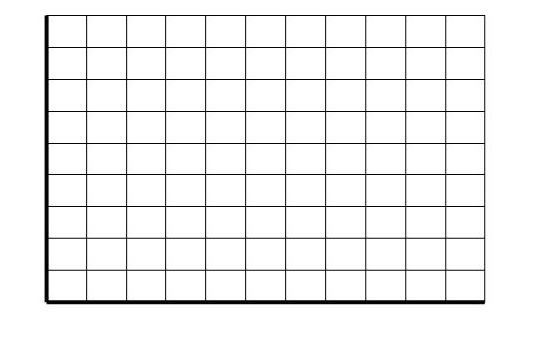


Velocity (m/s)

Time (s)

3. A bear spies some honey and takes off from rest, accelerating at a rate of 2.0 m/s2. If the bear runs for 4 seconds before reaching the honey, how far away was the hive?

4. A bus moving at 20 m/s (t = 0) slows at a rate of 4 m/s each second.



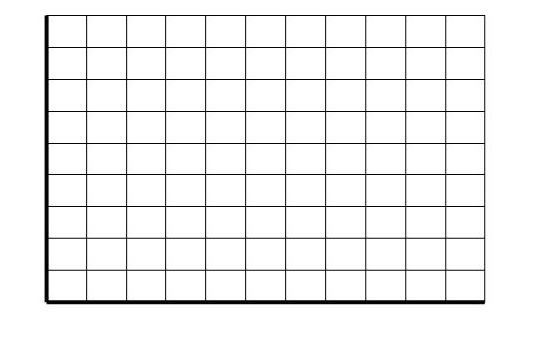
Velocity (m/s)

Time (s)

a) How long does it take the bus to stop?

b) How far does it travel while braking?

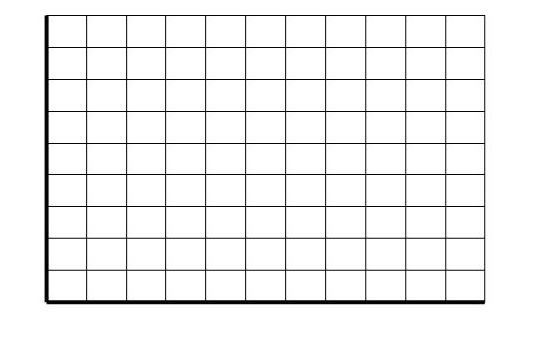
5. A physics student skis down a hill, accelerating at a constant 2.0 m/s2.



Velocity (m/s)

Time (s)

If it takes her 15 seconds to reach the bottom, what is the length of her trip down the side of the mountain?



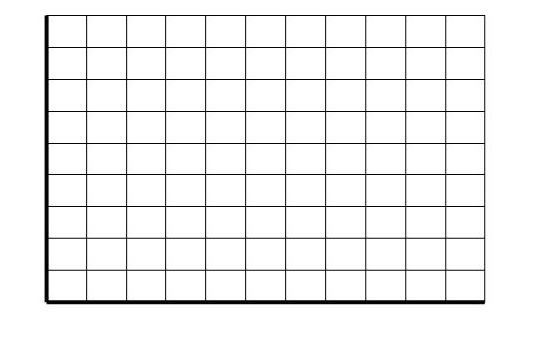
Velocity (m/s)

Time (s)

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?

1. How long is the driveway?



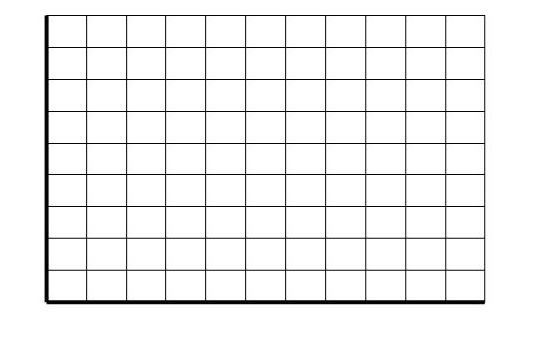
Velocity (m/s)

Time (s)

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.



Velocity (m/s)

Time (s)

a) Determine the acceleration of the car.

b) Determine the distance it travels in the 3rd second  
 (t = 2s to t = 3s).