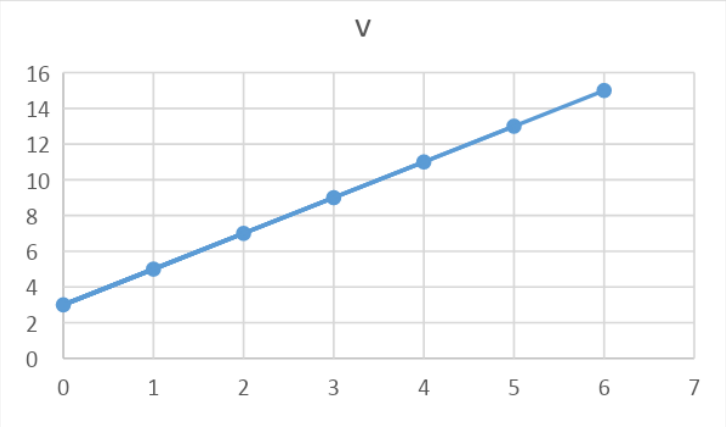
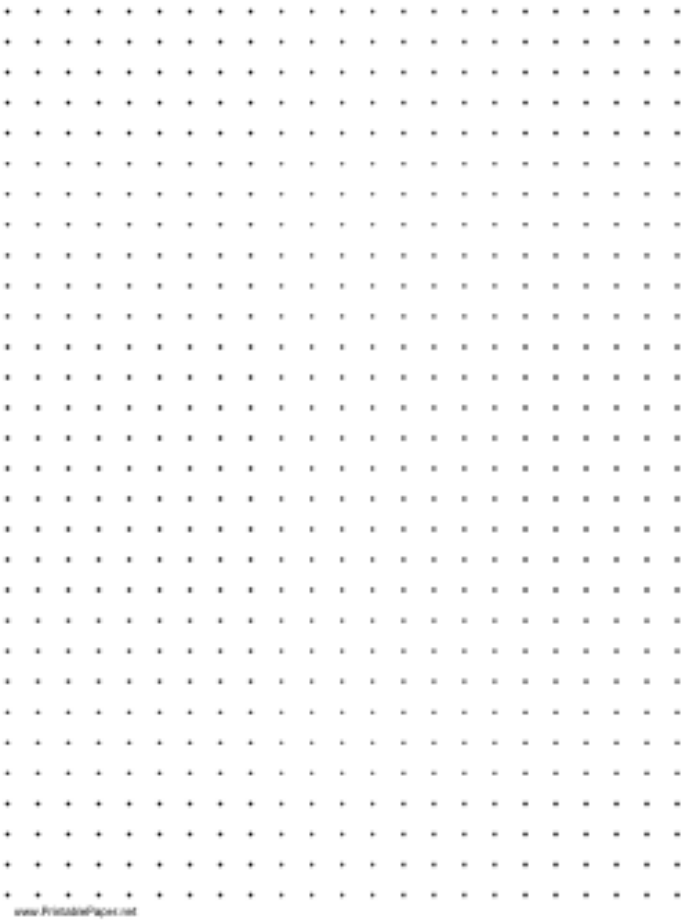
Uniform Acceleration Worksheet

Name: _____

1. Find the displacement for the object whose motion is represented in the following velocity-time graph between 0 and 6 seconds;

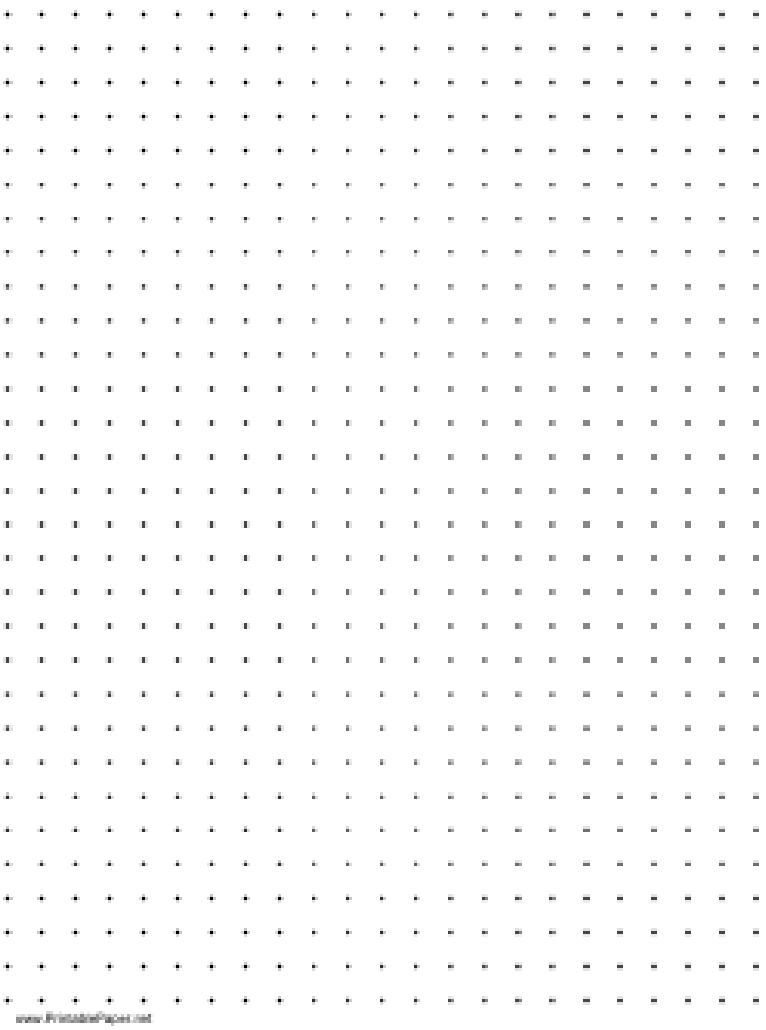


2. A runner steadily increases his speed from 2m/s[E] to 9m/s[E] over 5 seconds. Draw a velocity-time graph to represent this motion, and use it to help you find the displacement that the runner travelled over this five second period of time.

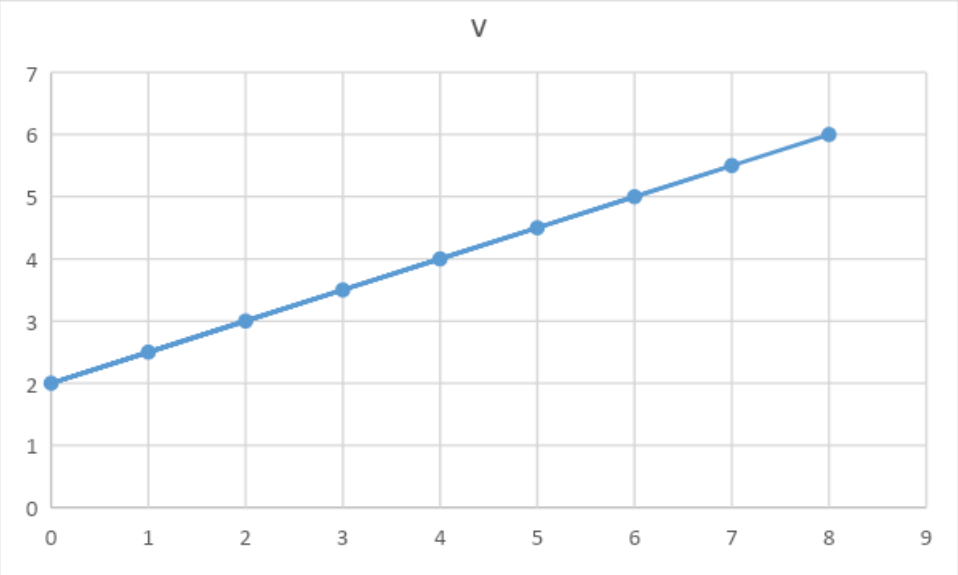


3. Looking at the graph from question 1, and assuming that the object continues to accelerate this way for the next few seconds, what will be the velocity of the object at 9 seconds?

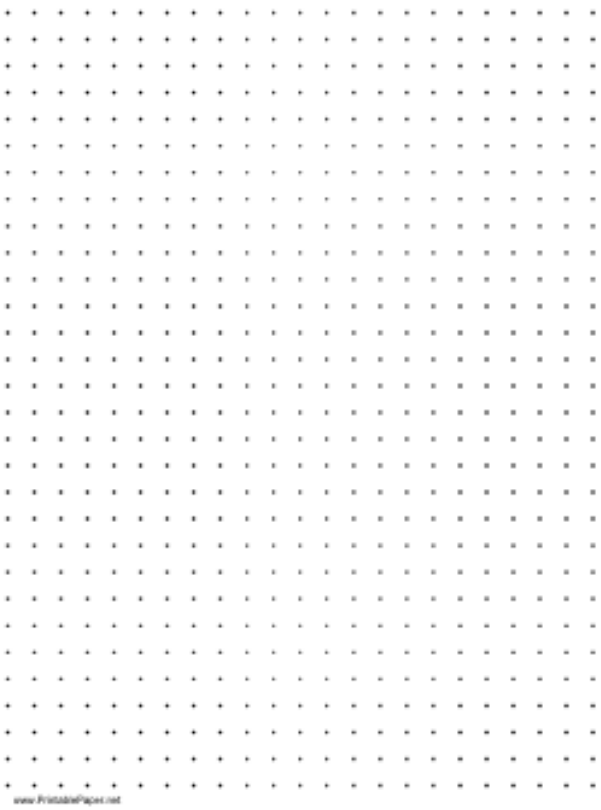
4. A car is moving along a road with a speed limit of 11.1m/s. Once the car reaches a sign for a new speed limit, it begins to accelerate at 4.5m/s^2. Draw a velocity-time graph representation of this scenario. Use the graph to determine how fast this car will be travelling if it continues its acceleration for 3.75s.



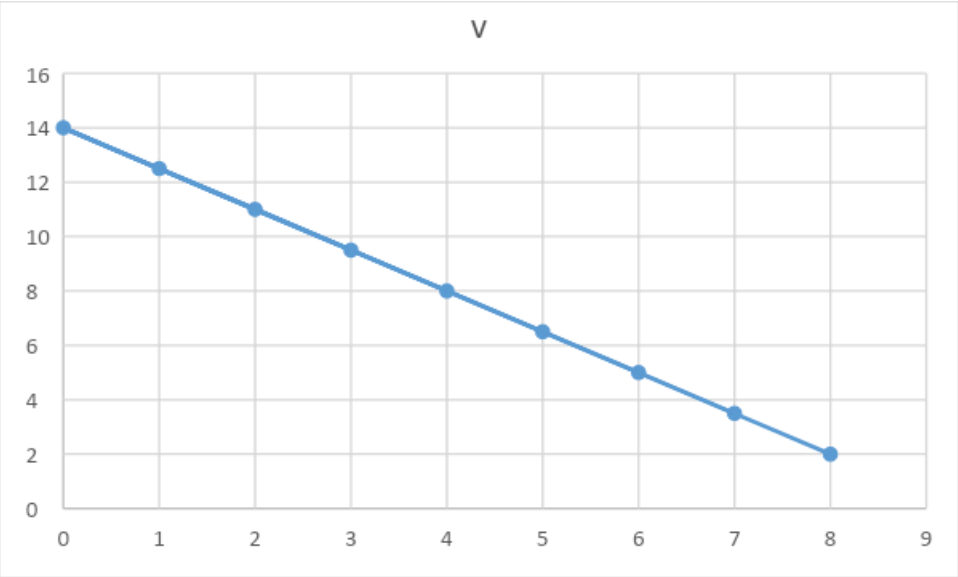
5. An object moves, and its velocity is represented by the graph shown below. If the object continues to move for a total of 10 seconds with this same acceleration, what will be the total displacement in its 10 seconds of motion?



6. A cow walks to a field at 1m/s, then upon reacting the field, accelerates for 5s at 0.25m/s^2. Create a velocity-time graph to represent this scenario. Use the graph to help you find the total displacement of the cow over the 5 seconds it was accelerating.



7. An object's motion is represented by the velocity time graph shown below. If the object continues to move with this same acceleration for a total of 10 seconds, what will be the total displacement of the object over the 10seconds?



8. A cat runs across the street at a speed of 12m/s. A car honks its horn at the cat, and it tries to slow down as fast as possible. It accelerates in the opposite direction with an acceleration of $2m/s^2$ for 2.25s. Draw a velocity-time graph to represent this scenario. Use the graph to help you calculate the displacement of the cat, as it was desperately trying to stop its forward motion.