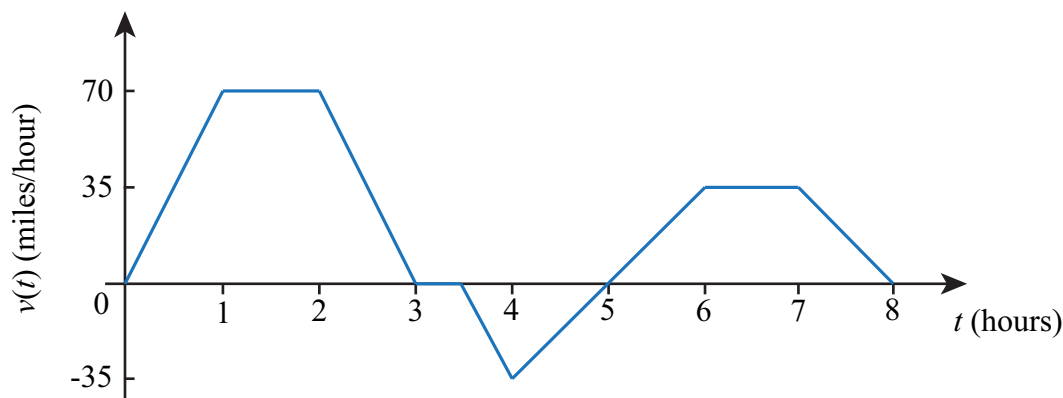


Fundamental Theorem of Calculus I

The following graph shows the velocity of our friend Matt over an eight hour drive. Positive velocity indicates that the car is traveling north. After driving for one hour, Matt was 80 miles away from his house.



1. Find the velocity of the car after 30 mins.
2. After 2 hrs how far was Matt from his home?
3. How far was Matt from his home at $t = 0$?
4. When and for how long did Matt stop driving?
5. How far did Matt drive before taking a break?
6. Which time intervals did he decelerate?
7. Find the distance covered by Matt while he was driving South.
8. How far was Matt from his home after 6 hrs?
9. Find the distance covered by Matt in the last hour.
10. Estimate $\int_0^8 |v(t)| dt$.