A ship leaves New York. For the first two hours it moves at 20mph, it then speeds up to 30mph. Let t be the time in hours since the ship left New York and D the distance of the ship from New York.

1. Graph the speed of the ship as a function of the time for  $0 \le t \le 10$ .

2. How far does the ship cover in the first two hours?

3. Find a formula for D in terms of t for 2 < t < 10.