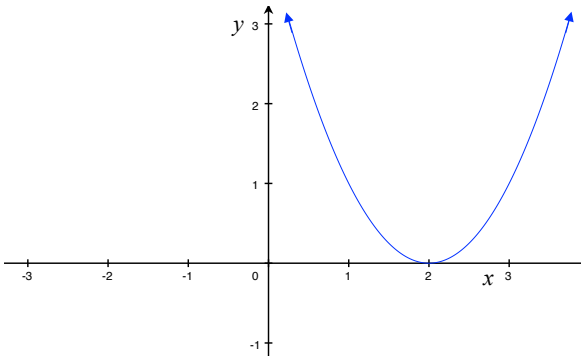
Section 1.5, problem 8: E.
The Graph

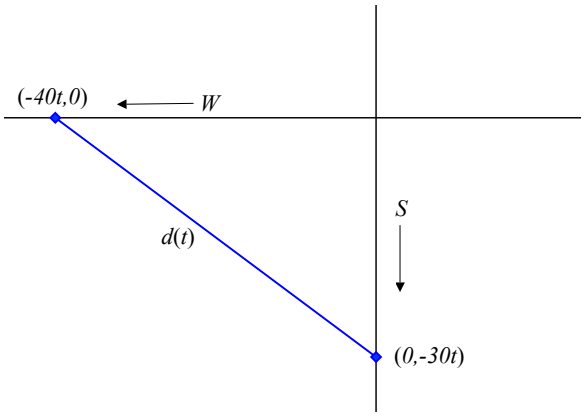


is the graph of the quadratic function $y = x^2$ shifted two units to the right, so it is the graph of the function $y = (x-2)^2$, which is function E.

Section 1.5, problem 20: $y = (x+4)^3$.

Section 1.6, problem 18: $d(t) = 50t$.

Explanation: We will use the variable t to measure time in hours. At time $t = 0$, the two cars are at the same intersection, which you can think of as the origin of a set of axes.
At time $t > 0$, the south-going car has traveled $30t$ miles (because it is traveling at the constant speed of 30 mph) and the west-going car has traveled $40t$ miles (because it is traveling at the constant speed of 40 mph).



This places the westbound car at the point $(-40t, 0)$ on the horizontal axis of our hypothetical coordinate system and the southbound car at the point $(0, -30t)$ on the vertical axis of this coordinate system (see figure above). The distance $d(t)$ between these two points is found using the distance formula:

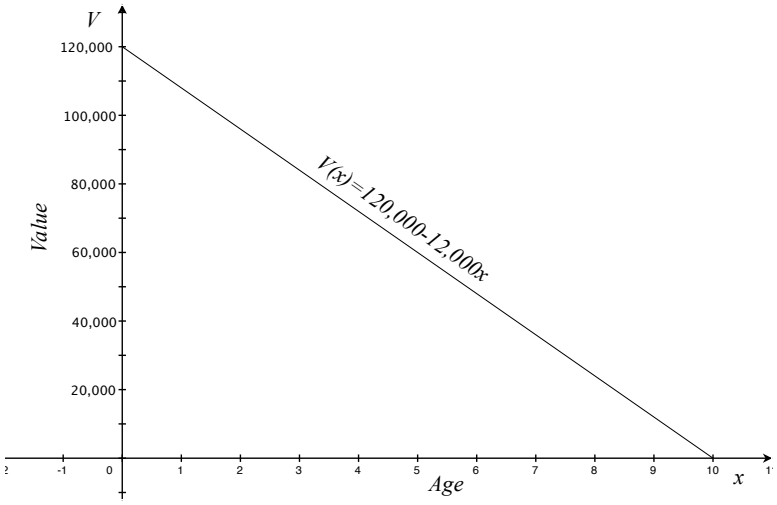
$$d(t) = \sqrt{(-40t)^2 + (-30t)^2} = \sqrt{2500t^2} = 50t.$$

Section 2.1, problem 52: *See Example 5 in the section for details on how to work this out.*

(a) $V(x) = 120,000 - 12,000x$.

(b) The implied domain is $[0, 10] = \{x \mid 0 \leq x \leq 10\}$.

(c)



(d) $V(4) = 120000 - 48000 = 72000$.

(e) After 4 years (see (d)).