1.(1 pt) A car drives down a road in such a way that its velocity (in m/s) at time t (seconds) is

$$v(t) = 2t^{1/2} + 4$$

.
Find the car's average velocity (in m/s) between $t = 5$ and $t = 9$.

2.(1 pt) A solid lies between two parallel planes 5 feet apart and has a volume of 39 cubic feet. What is the average area of cross-sections of the solid by planes that lie between the given ones?

3.(1 pt) Find the average value of : $f(x) = 3\sin x + 3\cos x$ on the interval $[0, 11\pi/6]$
Average value = _____

4.(1 pt) Find the mean value of the function $f(x) = |7 - x|$ on the closed interval $[4, 8]$.
mean value = _____

5.(1 pt) In a certain city the temperature (in degrees Fahrenheit) t hours after 9am was approximated by the function

$$T(t) = 30 + 9\sin\left(\frac{\pi t}{12}\right)$$

Determine the temperature at 9 am. _____
Determine the temperature at 3 pm. _____
Find the average temperature during the period from 9 am to 9 pm. _____

6.(1 pt) One fine day in Rochester the low temperature occurs at 5 a.m.
and the high temperature at 5 p.m. The temperature varies sinusoidally all day.

The temperature t hours after midnight is

$$T(t) = A + B\sin\left(\frac{\pi(t - C)}{12}\right)$$

where A, B, and C are certain constants.
The low temperature is 60 and the high temperature is 70.
Find the average temperature during the first 5 hours after noon.
Hint: The high and low temperatures can be used together to find
A and B. Determine C from the fact that it is hottest at 5 p.m.