

1. If we let  $v(t)$  be her velocity, then

$$\text{distance} = \int_0^2 v(t) dt \approx 35 \text{ miles}$$

This answer was obtained by approximating the area under the graph of  $v(t)$  between 0 and 2.

- 2.

$$\int_0^5 (0.3t^2 + 0.6t + 1) dt \approx 25 \text{ bushels}$$

At \$3 per bushel, the value of the crop will have increased by \$75.

- 3.

$$\text{change in thickness} = \int_0^8 0.2t dt = 6.4 \text{ inches}$$

$$\text{thickness at noon} = 6 \text{ inches} + 6.4 \text{ inches} = 12.4 \text{ inches}$$