1. ( 15 pts ) Find the general indefinite integral.
a. $\int\left(3 \sqrt{t}+\frac{1}{2 \sqrt{t}}\right) d t$
b. $\int 4 e^{-2 x} d x$
c. $\int \frac{2+3 y}{4 y} d y$
2. (5 pts) An object is moving along a straight path that runs north and south. Its velocity, in feet per minute, is given by

$$
v(t)=18-8 t+0.3 t^{2}
$$

where the north is the positive direction. After ten minutes, is the object north of its starting position, or south? Hint: compute the net change of position.

