

### Problem Set 92

2a.  $x(0) = 9;$        $x(2) = 13$

b. 6 units

4. -1

6.  $h(0) = 0;$        $h'(0) = 1$

8. 0

10. 0

12.  $\ln|y| = x + C$     or     $|y| = Ce^x$

14a.  $a = 0;$        $b = -7;$        $c = -3$   
 $f(x) = x^3 - 7x - 3$

b.  $c = \sqrt{3}$

16a. 80 mph

b. Yes. The car must attain its average speed at least once on the given interval of time

18.  $\frac{\pi^2}{2}$  units<sup>3</sup>

20a. -k

b. k

22.  $-\frac{1}{2}x^{-3/2} + \frac{2(\cos x - \sin x)}{\sin x + \cos x}$

24. D