Arc Length- HW Problems

Find the length of the following curves.

1. $y = 2 + \frac{2}{3}x^{\frac{3}{2}}$; $0 \le x \le 3$
2. $y = \frac{x^3}{3} + \frac{1}{4x}$; $1 \le x \le 3$
3. $x = \frac{y^4}{8} + \frac{1}{4y^2}$; $1 \le y \le 2$
4. $y = \ln[sin(x)]$; $\frac{\pi}{4} \le x \le \frac{3\pi}{4}$
5. $y = \frac{e^x + e^{-x}}{2}$; $0 \le x \le 2$
6. $x = \frac{3}{2}y^{\frac{2}{3}} + 1$; $1 \le y \le 27$
7. $y = \frac{1}{3}x^{\frac{3}{2}} - x^{\frac{1}{2}}$; $1 \le x \le 4$

8. Use Simpson's rule with $n = 10$ to approximate the length of $y = xsin(x)$; $0 \le x \le \pi$.