

Problem Set 103

2. $\frac{490\sqrt{61}}{61}$ mph

4a. $\frac{7}{\ln 8}$
 b. 1.751

6a. $\frac{\pi}{8} \int_0^4 e^{2x} dx$
 b. $\frac{\pi}{16}(e^8 - 1)$ units³

8. $\delta = \frac{\epsilon}{3}$

10. e

12. 6x

14. $\frac{\tan x}{2} > \frac{x}{2} > \frac{\sin x}{2}$

$\tan x > x > \sin x$

$\frac{1}{\cos x} > \frac{x}{\sin x} > 1$

$\cos x < \frac{\sin x}{x} < 1$

$\lim_{x \rightarrow 0} \cos x \leq \lim_{x \rightarrow 0} \frac{\sin x}{x} \leq \lim_{x \rightarrow 0} 1$

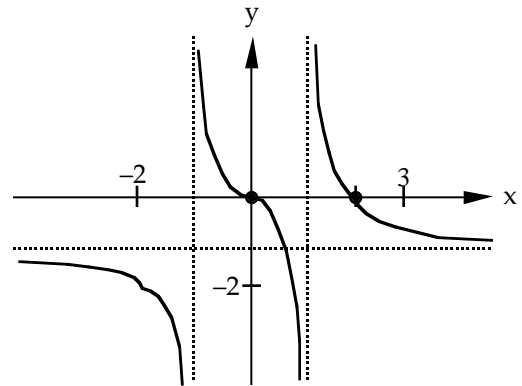
$1 \leq \lim_{x \rightarrow 0} \frac{\sin x}{x} \leq 1$

$\lim_{x \rightarrow 0} \frac{\sin x}{x} = 1$

16. 4

18. $\sin x^3$

20.



22. $(1.8, \frac{241}{205})$

24. 112