

Problem Set 40

2. -1 unit/sec.

4a. $-2, 1$

b



local max: $(-2, 12)$

local min: $(1, -\frac{3}{2})$

6. $\frac{77}{8}$ units²

8. max: $(0.279, -0.732)$
min: $(2.387, -5.417)$

10. $-2 \cos x - 2x^2 - x^{\frac{3}{2}} - 3x + C$

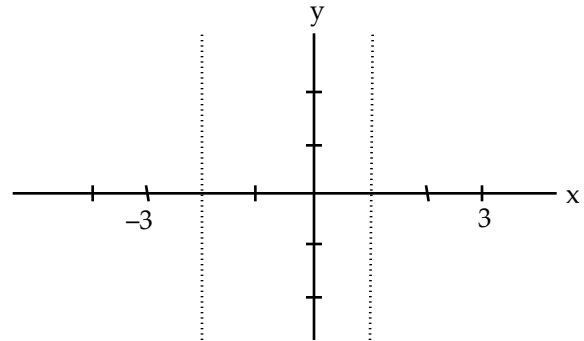
12. $x + \ln|x| + C$

14. $\frac{ds}{dx} = \cot x$

16. $\frac{dy}{dx} = \frac{\cos x - y}{x + \sin y}$

18. $f'''(-2) = -\frac{1}{2}$

20.



22. $-\frac{1}{2}$

24. $1^3 + 2^3 + 3^3 = 36$

$$S_3 = \left(\frac{3(4)}{2} \right)^2 = 36$$

$$S_{40} = 672,400$$