

### Problem Set 89

2. critical numbers:  $x = -1, 0, 8$   
 maximum: 8 when  $x = 8$   
 minimum: 0 when  $x = 0$

4.  $\frac{25}{3}$

6.  $c = 0$

8.  $x^2 + 2y^2 = C$

10.  $y = x^2$

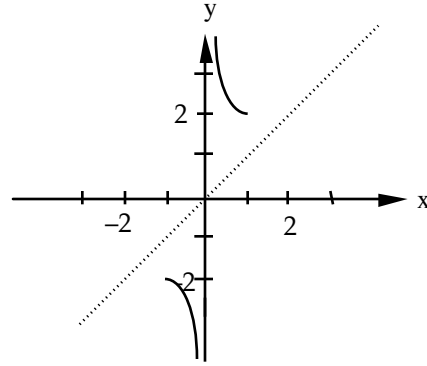
12.  $c = 4.5$ ; midpoint = 4.5

14.  $2\pi \int_0^1 (x^2 - x^3) dx$

16.  $2\pi \int_0^{3/2} (-2y^2 + 3y) dy$

18. 
$$\frac{1}{x^2 + 1} + \cot x + 14^x \ln 14 - \frac{\sec x \tan x + e^x}{1 + x} + \frac{\sec x + e^x}{(1 + x)^2}$$

20.



22.  $\frac{1}{3} \ln|x^3 + 1| + C$

24. D