

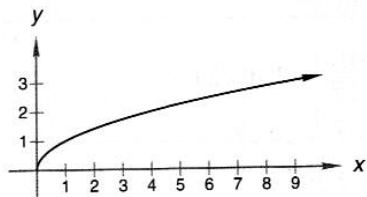
### Calculus — Problem Set 53

2.  $1in \times 4in \times 4in = 16in^3$

4. -1

6. 2

8.



10.  $\approx 5.5639$

12.  $\sin^8 x + C$

14.  $e^{4x^2} + C$

16.  $\sin(\sin^2 x) + C$

18. 
$$\frac{-\frac{e^x}{\cot^2 x + x} + e^x(-2 \cot x \csc^2 x + 1)}{(\cot^2 x + x)^2}$$

20. A

22.

$x$	$1 - \frac{x^2}{2!} + \frac{x^4}{4!}$	$\cos x$
0.1	0.9950	0.9950
0.2	0.9801	0.9801
0.3	0.9553	0.9553

24. C

### Calculus — Problem Set 54

$x(2) = -13units$

2.  $v(2) = -14units / s$

$a(2) = -8units / s^2$

4.  $t \approx 4.0816s$

Max height  $\approx 86.6327m$

6.  $\ln 3$

8.  $\frac{1}{2}$

10.  $\approx 3.1416$

12.  $(x^2 + 1)^{3/2} + C$

14.  $(\ln x)^4 + C$

$\ln(\sin^2 x) + C \dots or \dots$

16.  $2 \ln|\sin x| + C$

18.

$$\frac{2x^3 e^{x^2}}{(x^2 + 1)^2} \cos^2 x -$$

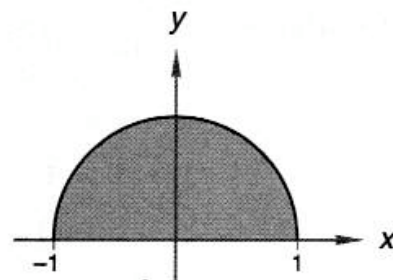
$$\frac{e^{x^2} \sin(2x)}{x^2 + 1} +$$

$$\frac{e^x}{\sin x} (1 - \cot x)$$

20. C

22.  $e^e$

24.



$$\int_{-1}^1 \sqrt{1 - x^2} dx = \frac{\pi}{2}$$