2. a. $\frac{x^2e^2}{2} + 3\sqrt[3]{x} + C$ b. $-\frac{2}{3t\sqrt{t}} + te^x - \frac{x^2}{2t^2} + C$

c. $\frac{z^2}{2} + \ln|z| + C$ d. 2 sen(x) y + 2/5 y^2 + $\sqrt{3}$ e^xy + C

e. sen(x) + 2ln|x|- 2/7 $\sqrt{x^7}$ + C f. . - (cotg x + x) + C

g. 1/3 arctg x + 8tg(x) + C h. $\frac{x^3}{3} - \frac{3}{5}x^{10/3} + \frac{3}{11}x^{\frac{11}{3}} + C$

3. i. 385.33 metros aproximadamente
ii. 383.33 metros aproximadamente.

4. a. – 1/12cos($4x^3$) + C b. $\frac{2}{3}\sqrt{\ln^3 x} + C$

c. – ln(|cos x||) + C d. $\frac{-1}{\ln(x+1)} + C$

e. $-\frac{1}{3}\sqrt{(h^2 - r^2)^3} + C$ f. $\frac{1}{2}y^2 + \ln y + \frac{1}{8(y^2+3)^4} + C$

5. v=277.66m/s.

6. a. $\frac{x^4}{4}\left(\ln x - \frac{1}{4}\right) + C$ b. $-\frac{e^{-3x}}{3}\left(x^2 + \frac{2}{3}x + \frac{2}{9}\right) + C$

c. cos *x* + *x* (ln*x* – 1 + sen x) + *C*

d. $z\,\arccos z - \sqrt{1-z^2} + C$ e. $\frac{x(\cos(\ln x) + sen(\ln x))}{2} + C$

f. $\frac{x^3 arctg\,x}{3} - \frac{x^2}{6} + \frac{\ln(x^2+1)}{6} + C$

7. a. $\frac{g(x)^2}{2} + C$ b. $-\frac{1}{h(x)} + C$ c. c. $\frac{2}{3}\sqrt{(r+f(x))^3} + C$

8. a. 11ln|h - 3| - 7ln|h - 2| + C b. $\frac{1}{2}\left(\ln|t-1| - \ln|t+1|\right) + \frac{1}{t} + C$

c. k(1/2 x^2 + 3x + 9ln|x-3|) + C d. $\frac{x^3}{3} + \frac{x^2}{2} + 4x + 2\ln|x| + 5\ln|x-2| - 3\ln|x+2| + C$

9.

a. $f(x) = x^2 - sen(x) + 6$

b. $f(x) = \frac{1}{6}x^4 - \frac{5}{6}x^3 + x^2 + x + 2$

c-g(x) = $\frac{1}{4}\ln(3+e^{4x}) - \ln(3) - \frac{\ln 4}{4}$

10.

a. ½[(x+2y)ln(x+2y)-(x+2y)}+C

b. $2\ln x \operatorname{sen}(\ln x) + 2\cos(\ln x) + C$

c. $-\frac{\ln\left|e^x - 1\right| - \ln\left|e^x + 2\right|}{3} + C$

d. $\ln(x) - 2\ln(|\ln x + 1|) + \frac{3}{\ln(x) + 1} + C$

11. $x(t) = a/2\ t^2 + v_0\ t + x_0$

12. $v(t) = v_0\ e^{-3t/m}$, $x(t) = -m/3\ v_0 e^{-3t/m} + x_0 + m/3v_0$