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(7) $\int (2z+3)\,dz = z^2+3z+C$

(9) $\int (6t^2-8t+7) = 2t^3-4t^2+7t+C$

(11) $\int (4z^3+3z^2+2z-6)\,dz = z^4+z^3+z^2-6z+C$

(19) $\int (10u^{3/2}-14u^{5/2})\,du = 10\frac{2}{5}u^{5/2}-14\frac{2}{7}u^{7/2}+C$

$= 4u^{5/2}-4u^{7/2}+C$

(25) $\int (-9t^{-2.5}-2t^{-1})\,dt$

$= -9\frac{t^{-1.5}}{-1.5} - 2\ln|t|+C = 6t^{-1.5}-\ln(t^2)+C$

(35) $\int (e^{2u}+4u)\,du = \frac{e^{2u}}{2}+2u^2+C$

(39) $\int \frac{\sqrt{x}+1}{\sqrt[3]{x}}\,dx = \int \left(\frac{x^{1/2}}{x^{1/3}}+\frac{1}{x^{1/3}}\right)dx = \int (x^{1/6}+x^{-1/3})\,dx$

$= \frac{6}{7}x^{7/6}+\frac{3}{2}x^{2/3}+C$

(43) $f'(x) = x^{2/3}$, $f(1) = 3/5$

$f(x) = \frac{3}{5}x^{5/3}+C$, $f(1) = \frac{3}{5}(1)^{5/3}+C = 3/5$

$\Rightarrow C = 0$

$f(x) = \frac{3}{5}x^{5/3}$

(65) $B'(t) = .06048t^2 - 1.292t + 15.86$

(a) $B(0) = 839.7$, $B(t) = \frac{.06048}{3}t^3 - \frac{1.292}{2}t^2 + 15.86t + C$

$\Rightarrow C = 839.7$

$B(t) = .02016t^3 - .646t^2 + 15.86t + 839.7$

(b) $B(45) = 2082.33$ (2,082,330 BA/BS in 2015)

(69) $s''(t) = -32$, $s(0) = 6400$, $s'(0) = 0$

$s'(t) = \int(-32)\,dt = -32t + C$, $s'(0) = 0 \Rightarrow C = 0$

$s(t) = \int s'(t)\,dt = \int -32t\,dt = -16t^2 + C$

$s(0) = 6400 \Rightarrow C = 6400$.

$s(t) = -16t^2 + 6400$

$s(t) = 0 \Rightarrow t = \sqrt{\frac{6400}{16}} = 20$ seconds.