7.1 Calculus
5-24

(5) $\int 6\,dk = \boxed{6k + C}$ (6) $\int 9\,dy = \boxed{9y + C}$

(7) $\int 2z + 3\,dz = \frac{2z^2}{2} + 3z + C = \boxed{z^2 + 3z + C}$

(8) $\int (3x - 5)\,dx = \boxed{\frac{3x^2}{2} - 5x + C}$

(9) $\int (6t^2 - 8t + 7)\,dt = \frac{6t^3}{3} - \frac{8t^2}{2} + 7t + C = \boxed{2t^3 - 4t^2 + 7t + C}$

(10) $\int (5x^2 - 6x + 3)\,dx = \frac{5x^3}{3} - \frac{6x^2}{2} + 3x + C = \boxed{\frac{5}{3}x^3 - 3x^2 + 3x + C}$

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

$= \boxed{z^4 + z^3 + z^2 - 6z + C}$

(12) $\frac{16y^4}{4} + \frac{9y^3}{3} - \frac{6y^2}{2} + 3y + C = \boxed{4y^4 + 3y^3 - 3y^2 + 3y + C}$

(13) $\int (5z^{1/2} + \sqrt{2})\,dz = \frac{5z^{3/2}}{3/2} + \sqrt{2}\,z + C = \boxed{\frac{10}{3}z^{3/2} + \sqrt{2}\,z + C}$

(14) $\frac{t^{5/4}}{5/4} + \pi^{1/4}t + C = \boxed{\frac{4}{5}t^{5/4} + \pi^{1/4}t + C}$

(15) $\int (5x^3 - 40x)\,dx = \frac{5x^4}{4} - \frac{40x^2}{2} + C = \boxed{\frac{5}{4}x^4 - 20x^2 + C}$

(16) $\int (x^6 + 4x^3 + 3x^2)\,dx = \frac{x^7}{7} + \frac{4x^4}{4} + \frac{3x^3}{3} + C$

$\boxed{= \frac{1}{7}x^7 + x^4 + x^3 + C}$

(17) $\int (4v^{1/2} - 3v^{3/2})\,dv = \frac{4v^{3/2}}{3/2} - \frac{3v^{5/2}}{5/2} + C$

$= \boxed{\frac{8}{3}v^{3/2} - \frac{6}{5}v^{5/2} + C}$

(18) $\int (15x^{3/2} + 2x^{1/2})\,dx = \frac{15x^{5/2}}{5/2} + \frac{2x^{3/2}}{3/2} + C$

$= \boxed{6x^{5/2} + \frac{4}{3}x^{3/2} + C}$

(19) $\frac{10v^{5/2}}{5/2} - \frac{14v^{7/2}}{7/2} + C = \boxed{4v^{5/2} - 4v^{7/2} + C}$

(20) $\frac{56t^{7/2}}{7/2} + \frac{18t^{9/2}}{9/2} + C = \boxed{16t^{7/2} + 4t^{9/2} + C}$

(21) $\int 7z^{-2}\,dz = \frac{7z^{-1}}{-1} + C = \boxed{\frac{-7}{z} + C}$

(22) $\int 4x^{-3}\,dx = \frac{4x^{-2}}{-2} + C = \boxed{\frac{-2}{x^2} + C}$

(23) $\int (\pi^3 y^{-3} - \sqrt{\pi}\, y^{-1/2})\,dy = \frac{\pi^3 y^{-2}}{-2} - \frac{\sqrt{\pi}\, y^{1/2}}{1/2} + C = \boxed{\frac{\pi^3}{-2y^2} - 2\sqrt{\pi y} + C}$

(24) $\int (v^{1/2} + v^{-2})\,dv = \frac{v^{3/2}}{3/2} + \frac{v^{-1}}{-1} + C = \boxed{\frac{2}{3}v^{3/2} - \frac{1}{v} + C}$