Integral Review Answers

(1) $\frac{25}{2}x^2 + 10x + \ln|x| + C$

(2) $\frac{1}{18}x + \frac{1}{108}\sin 6x + C$

(3) $-2(1-x)^{1/2} + \frac{2}{3}(1-x)^{3/2} + C$

(4) $-\frac{5}{2}t^2 - 9t - 17\ln|2-t| + C$

(5) $-5(\ln x)^{-1} + C$

(6) $\frac{1}{3}(2x^4 - x^2 + 5)^{3/2} + C$

(7) $\frac{8}{15}x^{15/4} - \frac{4}{11}x^{11/4} + \frac{8}{3}x^{3/2} - 4x^{1/4} + \frac{4}{3}x^{3/4} + C$

(8) $\tan\theta + \sec\theta + C$

(9) $x - x^3 + \frac{2}{5}x^5 - \frac{1}{7}x^7 + C$

(10) $\frac{x^2}{2} + 4x + C$

(11) $-\frac{1}{3}\csc 3\theta + C$

(12) $-\frac{4}{3}(1-y)^{3/2} + \frac{2}{5}(1-y)^{5/2} + C$

(13) $\ln\left|\sqrt{x^2+6x-5}\right| + C$

(14) $\frac{x^3}{3} + 2x - \frac{1}{x} + C$

(15) $\frac{3}{2}(\ln x)^2 + C$

(16) $\ln\left|(1+x^{1/3})^3\right| + C$

(17) 2

(18) $\ln(e^2+1) - 1$

(19) $-\ln|1-2e| - 2e$

(20) $\sqrt{3}$ → problem changed to $\int_0^{\pi/3}\sec^2 x\,dx$

(21) $3\pi - \ln\sqrt{\pi} - 3 - \ln\left|\sqrt{\cos 2}\right|$

(22) 0