Practice Assignment 3

In this third practice assignment, you will review topics from
7th edition: sections 6.1, 6.2, 6.3, 6.4 and 8.5 (partial).
8th edition: sections 6.1, 6.2, 6.3 and 8.5 (partial) plus Integration by Substitution and Completing the square method.
Try all problems for practice.
If you have difficulties, ask for help in class or in the instructor's office; all answers are shown in another file.

(1) Evaluate $\displaystyle\int_{-1}^{0} 28x\,(x+2)^6\,dx$

(2) Determine $\displaystyle\int 1760x^2\,\sqrt[3]{(3-2x)^2}\,dx$

(3) Determine $\displaystyle\int 315x\,(6x-5)^{3/2}\,dx$

(4) Evaluate $\displaystyle\int_{-2}^{2} 30x\,\sqrt{5-2x}\,dx$

(5) Evaluate $\displaystyle\int_{-2}^{0} \frac{12x\,dx}{\sqrt{4x+9}}$

(6) Determine $\displaystyle\int \frac{231x^2\,dx}{\sqrt[4]{1-2x}}$

(7) Evaluate $\displaystyle\int_{0}^{1} 2\,(2x-1)\,e^{2x}\,dx$

(8) Determine $\displaystyle\int (8x-1)\,\cos 2x\,dx$

(9) Determine $\displaystyle\int (x^2+4)\,e^{-x}\,dx$

(10) Determine $\displaystyle\int 18x^2\,\ln(2x)\,dx$

(11) Determine $\displaystyle\int (6x-5)\,\ln(2x)\,dx$

(12) Determine $\displaystyle\int \frac{x}{1+\sqrt[3]{x^2}}\,dx$

(13) Determine $\displaystyle\int \frac{\sqrt{x}}{\sqrt{x}-6}\,dx$

(14) Determine $\displaystyle\int \frac{30x^2}{\sqrt{x+2}}\,dx$

(15) Determine $\displaystyle\int \frac{18}{3+\sqrt{x}}\,dx$

(16) Determine $\displaystyle\int 6\,(x^2-1)\,\sin 2x\,dx$

(17) Determine $\displaystyle\int \frac{35x^3}{\sqrt{2-x}}\,dx$

(18) Determine $\displaystyle\int (2x+5)^2\,\sqrt{2x-3}\,dx$

(19) Determine $\displaystyle\int (x^2-4x)\,(3-x)^{1/3}\,dx$

(20) Determine $\displaystyle\int x\,(\sqrt{x}+2)^2\,dx$

(21) Determine $\displaystyle\int \frac{\ln(4x)}{x^4}\,dx$

(22) Determine $\displaystyle\int (x^2-6x)\,\sqrt{1-4x}\,dx$

(23) Determine $\displaystyle\int (x+2)^2\,e^{3x}\,dx$

(24) Determine $\displaystyle\int (1-x)^3\,\sqrt{x+2}\,dx$

(25) Determine $\displaystyle\int \frac{x^2+4}{\sqrt{x+2}}\,dx$

(26) Determine $\displaystyle\int \frac{(x+1)^2}{\sqrt{x-2}}\,dx$

(27) Determine $\displaystyle\int (x^3+x)\,\sin 3x\,dx$

(28) Determine $\displaystyle\int (x^2+3x)\,(3x-1)^{1/2}\,dx$

(29) Determine $\displaystyle\int \frac{x}{\sqrt[3]{x+2}}\,dx$

(30) Determine $\displaystyle\int (24x^2-72x)\,\ln(3x)\,dx$

(31) Determine $\displaystyle\int \frac{x-2}{\sqrt[4]{x-1}}\, dx$

(32) Determine $\displaystyle\int (6-x)\,\sqrt{x+3}\, dx$

(33) Determine $\displaystyle\int (2x+3)\,\csc^2 4x\, dx$

(34) Determine $\displaystyle\int \left(3x-x^2\right) e^{-2x}\, dx$

(35) Determine $\displaystyle\int \frac{5x-4}{\sec 5x}\, dx$

(36) Determine $\displaystyle\int \frac{3x^2+11x+16}{(2x+3)\left(x^2-1\right)}\, dx$

(37) Determine $\displaystyle\int \frac{x^3-3x^2+x-15}{x^2-3x}\, dx$

(38) Determine $\displaystyle\int \frac{7x^2-9x-2}{x^3-2x^2}\, dx$

(39) Determine $\displaystyle\int \frac{5-x}{x^2+8x+15}\, dx$

(40) Determine $\displaystyle\int \frac{2x^3+x^2-2x-4}{2x^2+x}\, dx$

(41) Determine $\displaystyle\int \frac{12x^4-12x^3+3x^2-8x+5}{2x^2+x}\, dx$

(42) Determine $\displaystyle\int \frac{2x^3-4x^2-15x+5}{x^2-2x-8}\, dx$

(43) Determine $\displaystyle\int \frac{4x^2+2x-1}{x^3+x^2}\, dx$

(44) Determine $\displaystyle\int \frac{x^4}{(x-1)^3}\, dx$

(45) Determine $\displaystyle\int \frac{3x}{x^2-6x+9}\, dx$

(46) Determine $\displaystyle\int \frac{2x^3-x^2+3x+4}{x^2(x+1)}\, dx$

(47) Integrate using table $\displaystyle\int \frac{dx}{x^2(6-5x)^2}$

(48) Integrate using table $\displaystyle\int \frac{(3x+2)\, dx}{x^2(4-5x)^2}$

(49) Integrate using table $\displaystyle\int \frac{2\, dx}{(x-5)^2(3+2x)^2}$

(50) Integrate using table $\displaystyle\int \frac{dx}{x^2+4x-5}$

(51) Integrate using table $\displaystyle\int \frac{dx}{4x^2-4x-2}$

(52) Integrate using table $\displaystyle\int \frac{3\, dx}{-x^2+6x+18}$

(53) Integrate using table $\displaystyle\int (x+5)^2\,\sqrt{-4-2x}\, dx$

(54) Integrate using table $\displaystyle\int \frac{(x-3)^2}{\sqrt{x-8}}\, dx$

(55) Integrate using table $\displaystyle\int \frac{x^2-4x+4}{\sqrt{x+1}}\, dx$

(56) Integrate using table $\displaystyle\int \frac{4x^2-4x+1}{\sqrt{x+1}}\, dx$

(57) Determine $\displaystyle\int \frac{2x^2-4x-12}{x^3+3x^2}\, dx$

(58) Determine $\displaystyle\int \frac{4x^3+20x^2+14x-11}{(x+1)\,(x+4)}\, dx$

(59) Determine $\displaystyle\int \frac{4x^2+7x+9}{(x+3)\,(x+1)^2}\, dx$

(60) Determine $\displaystyle\int \frac{4x^2+23x-22}{(x+4)\,(x-1)^2}\, dx$

(61) Determine $\displaystyle\int \frac{6x^4-12x^3+6x^2+2x+1}{(x-1)^2}\, dx$

(62) Determine $\displaystyle\int \frac{9x^2 + 59x + 66}{(x-3)\,(x+3)^2}\ dx$

(63) Determine $\displaystyle\int \frac{x^4 + 4x^3 - x + 20}{x^2 + 4x}\ dx$

(64) Determine $\displaystyle\int \frac{2x^4 + 8x^3 + 3x^2 + 4x + 16}{x^2\,(x+4)}\ dx$

(65) Determine $\displaystyle\int \frac{3x^3 - 13x + 6}{x^2 - 4}\ dx$

(66) Integrate using table $\displaystyle\int \frac{2x - 3x^2}{\sqrt{4x+1}}\ dx$

(67) Integrate using table $\displaystyle\int \frac{4 - x^2}{\sqrt{x^2 + 4}}\ dx$

(68) Integrate using table $\displaystyle\int \frac{3 - x^2}{(x^2 - 1)^{3/2}}\ dx$

(69) Integrate using table $\displaystyle\int \big(\ln(5x+1)\big)^3\ dx$

(70) Integrate using table $\displaystyle\int \frac{x^3\ dx}{5 - 2\,e^{3x^4}}$

(71) Determine $\displaystyle\int \big(x^3 + 2x\big)\ \sin 2x\ dx$

(72) Determine $\displaystyle\int \big(x^2 - 4x\big)\,(2x-1)^{1/2}\ dx$

(73) Determine $\displaystyle\int \frac{x}{\sqrt[3]{x+1}}\ dx$

(74) Determine $\displaystyle\int \big(12x^2 - 36x\big)\,\ln(2x)\ dx$

(75) Determine $\displaystyle\int \frac{x-1}{\sqrt[4]{x+1}}\ dx$

(76) Determine $\displaystyle\int \frac{8x^4 + 16x^3 - 3x^2 + 2x - 8}{x^2\,(x+2)}\ dx$

(77) Determine $\displaystyle\int \frac{5x^3 - 79x - 28}{x^2 - 16}\ dx$

(78) Integrate using table $\displaystyle\int \frac{3x - 2x^2}{\sqrt{2x+1}}\ dx$

(79) Integrate using table $\displaystyle\int \frac{9 - x^2}{\sqrt{x^2 + 9}}\ dx$

(80) Integrate using table $\displaystyle\int \frac{4 + x^2}{(x^2 - 9)^{3/2}}\ dx$

(81) Integrate using table $\displaystyle\int \frac{(x+1)^2}{\sqrt{2 - 3x}}\ dx$

(82) Integrate using table $\displaystyle\int \frac{\sqrt{8 + 2x - x^2}}{x - 1}\ dx$

(83) Integrate using table $\displaystyle\int x^2\,\big(\ln x\big)^3\ dx$

(84) Integrate using table $\displaystyle\int \frac{(3x - 2)\,dx}{4 - x}$

(85) Integrate using table $\displaystyle\int \frac{3x\ dx}{(2 - x^2)(5 + x^2)}$

(86) Integrate using table $\displaystyle\int \frac{\sqrt{4x + 9}}{x + 2}\ dx$

(87) Integrate using table $\displaystyle\int \frac{4x^2\ dx}{(3x - 5)^5}\ dx$

(88) Integrate using table $\displaystyle\int (x - 5)^2\ \sqrt{3 + 2x}\ dx$

(89) Integrate using table $\displaystyle\int (x - 2)^2\ \sqrt{x^2 - 4x}\ dx$

(90) Integrate using table $\displaystyle\int 3x\ \sqrt{\frac{x^2 - 3}{x^2 + 5}}\ dx$

(91) Integrate using table $\displaystyle\int \frac{x\ dx}{\sqrt{x^4 - 3x^2 - 10}}$

(92) Integrate using table $\displaystyle\int 5x^3\ e^{4x}\ dx$

(93) Integrate using table $\displaystyle\int \frac{dx}{(x^2 - 6x + 5)^{3/2}}\ dx$

(94) Integrate using table $\int \dfrac{dx}{(x+3)\sqrt{x^2+6x+13}}$

(95) Integrate using table $\int \dfrac{3\,dx}{(x+3)\sqrt{7-6x-x^2}}$

(96) Integrate using table $\int \dfrac{4x\,dx}{(2x-5)(3-5x)}$

(97) Integrate using table $\int \dfrac{(5x-2)\,dx}{x(1-3x)}$

(98) Integrate using table $\int \dfrac{(x-4)^2\,dx}{(2+3x)^2}$

(99) Integrate using table $\int \dfrac{2\,dx}{(x-1)^2\sqrt{x^2-2x-15}}$

(100) Integrate using table $\int \dfrac{\sqrt{5x+11}}{x+2}\,dx$