PRINTABLE VERSION

Quiz 25

Question 1

Calculate the indefinite integral: $\int \frac{6}{x^2}\,dx.$

a) $-\frac{1}{x}+C$

b) $-\frac{6}{x}+C$

c) $-\frac{2}{x^3}+C$

d) $-\frac{12}{x^3}+C$

e) $-\frac{3}{x^2}+C$

Question 2

Calculate the indefinite integral: $\int \frac{3\,x^3-6}{x^2}\,dx.$

a) x^3-6x+C

b) $\frac{3}{2}\,x^2+\frac{6}{x}+C$

c) $\frac{3}{2}\,x^2-6x+C$

d) $9 - \dfrac{6\,x^3 - 12}{x^3} + C$

e) $3x + \dfrac{6}{x} + C$

Question 3

Calculate the indefinite integral: $\displaystyle\int \left(2x^3 + 5\sqrt{x} + \frac{1}{x^3}\right) dx.$

a) $\dfrac{2}{3}\,x^3 - \dfrac{10}{3}\,x^{3/2} - \dfrac{1}{2\,x^2} + C$

b) $\dfrac{1}{2}\,x^4 + \dfrac{10}{3}\,x^{3/2} - \dfrac{1}{2\,x^2} + C$

c) $\dfrac{1}{2}\,x^4 + \dfrac{10}{3}\,x^{3/2} - \dfrac{1}{x} + C$

d) $6x^2 + \dfrac{5}{2\,\sqrt{x}} - \dfrac{3}{x^4} + C$

e) $\dfrac{1}{2}\,x^4 - \dfrac{10}{3}\,x^{3/2} - \dfrac{1}{2\,x^2} + C$

Question 4

Calculate the indefinite integral: $\displaystyle\int \left(6\,\sqrt{x} - \frac{1}{\sqrt{x}} + 5e^x\right) dx.$

a) $4x^{3/2} + \sqrt{x} + \dfrac{1}{5}\,e^x + C$

b) $4x^{3/2} - 2\sqrt{x} + 5e^x + C$

c) $9x^{3/2} - 2\sqrt{x} + 5e^x + C$

d) $9x^{3/2} + 2\sqrt{x} + 5e^x + C$

e) $4x^{3/2} + 2\sqrt{x} + 5e^x + C$

Question 5

Find f givent that $f'(x) = 2x - 7$ and $f(1) = -1$.

a) $f(x) = x^2 - 7x + 1$

b) $f(x) = x^2 - 7x + 5$

c) $f(x) = 2x - 2$

d) $f(x) = 2x + 2$

e) $f(x) = x^2 - 7x + 9$

Question 6

Find f givent that $f'(x) = -5\ \sin(x)$ and $f(\pi) = -3$.

a) $f(x) = 5\cos(x) - 1$

b) $f(x) = 5\sin(x) + 3$

c) $f(x) = 5\cos(x) + 2$

d) $f(x) = 5\cos(x) + 5$

e) $f(x) = -5\sin(x) - 3$

Question 7

Find $f(x)$ based on the following information:
$f''(x) = \sin(x)$ with $f'(Pi) = 5$ and $f(0) = 2$.

a) $f(x) = -\cos(x) + 3$

b) $f(x) = -\sin(x) + 4\,x + 2$

c) $f(x) = \sin(x) - 4\,x - 1$

d) $f(x) = \cos(x) - 3$

e) $f(x) = -\sin(x) + 4\,x + 1$

Question 8

Calculate the indefinite integral: $\int \frac{1}{x^2+1}\,dx$.

a) $\tan(x) + C$

b) $\arcsin(x) + C$

c) $-\frac{2\,x}{\left(x^2+1\right)^2} + C$

d) $\arctan(x) + C$

e) $\frac{x^2\left(x^2+2\right)}{4} + C$

Question 9

Calculate the indefinite integral: $\int \left(4\ \sinh(x) + x^7\right)\, dx.$

a) $4\cosh(x) + \frac{7}{8}\, x^8 + C$

b) $-4\cosh(x) - \frac{1}{8}\, x^8 + C$

c) $4\cosh(x) + \frac{1}{8}\, x^8 + C$

d) $4\cosh(x) + 7x^6 + C$

e) $4\cosh(x) + \frac{1}{7}\, x^7 + C$

Question 10

Calculate the indefinite integral: $\int \left(\frac{1}{x} - \frac{1}{x^2} + \frac{2}{x^3}\right) dx.$

a) $\frac{1}{x} + \frac{1}{2\, x^2} - \frac{2}{3\, x^3} + C$

b) $\ln(x) + \frac{1}{x} - \frac{1}{x^2} + C$

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

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

e) $\ln(x) - \frac{1}{x} + \frac{1}{x^2} + C$