M1000 V16 Utvalgte feil

5b) $\ldots = 3\int_0^\infty \frac{1}{(x^2+1)+8}\,dx = 3\left[\arctan(x)+8\right]_0^\infty$

5b) $\ldots = 3\arctan(x^2+9)\Big|_0^\infty$

5c) $\int_0^2 |x-1|\,dx = \left[\left|\frac{1}{2}x^2 - x\right|\right]_0^2 \ldots$

5b) $\ldots \int_0^\infty \frac{3}{u}\,\frac{du}{2x} = \frac{3\ln(x^2+9)}{2x}$

8a) $g(x) = 1+\cos(\pi x) \qquad g'(x) = \pi\sin(x)$

1 $\quad A^{-1} = \frac{1}{14}\begin{bmatrix} 1 & 3 \\ -4 & 2 \end{bmatrix} \Rightarrow \det(A^{-1}) = \frac{1}{14}(2+12) = 1$

5c) $\int_0^2 |x-1|\,dx \Rightarrow \int_0^2 x+1\,dx$

3 $\quad i^2 = 1 \ldots$

5b) $\ldots \Rightarrow 3\ln|x^2+9|\Big|_0^\infty$

3 $\quad \ldots = 2i \times 5i - (1-2i \times 1-3i)$

$= 10i - 2i$

$= 8i \qquad$ polarform $8 \times 2e^{\pi/2}$

5c) $\int_0^2 |x-1|\,dx = \left[x^2 - x\right]_0^2$

8b) $\ldots = \left(\int e^{-\cos(x)^2}\right)' - \left(\int e^0\right)'$

$= e^{-\cos^2(x)} - 1$

11 a) $$2xy' = 3y + 2$$

$$\int 2x\,dx = \int 3y + 2\,dy$$

$$\vdots$$

7 b) $$x_1 = \dots = 2 - \frac{-4}{-11} = 2 - \frac{4}{11} = \dots$$

3 $$\dots = 10 - (1 - 3i - 2i + 6) = \dots = 3 + 5i$$

polar form $e^{\frac{5\pi i}{3}}$

10 Skriptet tar bruk av trapesmetoden og estimerer nullpunktet til $\sin(x^2)$ i intervallet $[-1, 3]$.

1 $A+B+C$

$$\begin{bmatrix} 2 & -3 \\ 4 & 1 \end{bmatrix} + \begin{bmatrix} 1 & 1 & 1 \\ 2 & -1 & -3 \end{bmatrix} = \begin{bmatrix} 2+1 & -3+1 & 1 \\ 4+2 & -1+1 & -3 \end{bmatrix} + \begin{bmatrix} 1 & 3 \\ 2 & -3 \end{bmatrix}$$

$$= \begin{bmatrix} 3+1 & -2+3 & 1 \\ 8 & -3 & -3 \end{bmatrix}$$

3 $$\dots \quad 10i^2 - (1-2i)(1-3i)$$

$$= 10i^2 - 1 - 3i - 2i + 6i^2 \quad \dots$$

5 b) $$\dots = \int \frac{3}{(x+3)(x-3)}\,dx = \dots$$

5 b) $$\int_0^\infty \frac{3}{x^2+9}\,dx = \int_0^\infty \frac{3x}{\frac{x^3}{3} + 9x} = \frac{\infty}{\infty} = 1$$

1 $$A^{-1} = \begin{bmatrix} 1/14 & 3/14 \\ -2/14 & 1/7 \end{bmatrix} \qquad \det A^{-1} = \left(\frac{1}{14} + \frac{1}{7}\right) - \left(\frac{3}{14} - \frac{2}{7}\right) = \frac{3}{14} - \frac{-1}{14}$$

$$= \frac{2}{7}$$

5a) $\dots = \frac{1}{2}(3\ln 5 - 3\ln 1) = \frac{1}{2} \cdot 3\ln 4$

9 $\dots = 2\pi \int_0^4 x\sqrt{x} - \frac{x}{2}\,dx = 2\pi\left[\frac{1}{2}x^2 \cdot \frac{3}{2}x^{3/2} - x\ln 2\right]_0^4$

9 $f(x) = \sqrt{x} - \frac{x}{2}$ $\dots$ $f^{-1}(x) = x^2 - 2x$ $\dots$

$\dots V = -0{,}4418$

5c) $\int_0^2 |x-1|\,dx = \int_0^2 \sqrt{(x-1)^2}\,dx = \int_0^2 \sqrt{x^2-2x+1}\,dx$

$= \int_0^2 (x^2-2x+1)^{1/2}\,dx = \left[\frac{2(x^2-2x+1)^{3/2}}{3\cdot(2x-2)}\right]_0^2 = \underline{\underline{1}}$

3 $\dots -10+5 = \underline{\underline{-5}} \Rightarrow \sqrt{5-i}\; E^{\pi i}$

5 a) $\int \frac{3}{2x-1}\,dx = \frac{3x + \ln|2x| + c}{-x}$ $\dots$

5a) $\int_1^3 \frac{3}{2x-1}\,dx \Rightarrow \int_1^3 3^{2x}\,dx \Rightarrow \left[3^{2x}\right]_1^3$

8b) Deriver $\int_0^{\cos(x)} e^{-t^2}\,dt \Rightarrow$

$\int_0^{\cos(x)} 2e^{-t^{2-1}}\,dt \Rightarrow \int_0^{\cos(x)} 2e^{-t}\,dt$

5a) $\ldots = \frac{3x}{x^2-x}\Big|_1^3 = \ldots$

9 $V = 2\pi\int_0^4 x\,\left|\sqrt{x} - \frac{x}{2}\right|dx = \left[2\pi\cdot\frac{x^2}{2}\left(\frac{x^{3/2}}{3/2} - \frac{x^2}{4}\right)\right]_0^4$

11a) $\ldots \ln\left|\frac{3}{2}y+1\right| + c_1 = \ln x + c_2$

$\frac{3}{2}y+1 = x + c \quad \ldots$