

28/5-13

1) $(4, 5), \frac{1}{6}\sqrt{41}, -\frac{1}{2\sqrt{5}}, 4x + 5y - 6z = 14 - 6\ln 6$

2) $f = @ (t, x) [x(z), \sin(t) - x(1)]'$

3) $\begin{pmatrix} a_{n+1} \\ b_{n+1} \\ c_{n+1} \end{pmatrix} = \begin{pmatrix} a_n \\ b_n \\ c_n \end{pmatrix} - \begin{pmatrix} (\frac{1}{2} - b_n)^2, -2a_n(\frac{1}{2} - b_n), 1 \\ (1 - b_n)^2, -2a_n(1 - b_n), 1 \\ (2 - b_n)^2, -2a_n(2 - b_n), 1 \end{pmatrix}^{-1} \begin{pmatrix} a_n(\frac{1}{2} - b_n)^2 + c_n - 1 \\ a_n(1 - b_n)^2 + c_n - 1 \\ a_n(2 - b_n)^2 + c_n - 2 \end{pmatrix}$

4) 2π 5) $8/4$ 6) $\varphi = K^2 y + x + y, 2$

7) 20π 8) $f(x, y) = \ln x y + g(x^2 y), \ln x^3 y^2$

31/8-13

1) $(1, \frac{\pi}{2}), \sqrt{1 + \frac{\pi^2}{4}}, \frac{1 + \frac{\pi^2}{4}}{\sqrt{2}}, z = x + \frac{\pi}{2}y - \frac{\pi}{2}$

2) $f = @ (t, x) [x(z), x(1) - z * x(z)]'$

3) $\begin{pmatrix} x_{n+1} \\ y_{n+1} \\ z_{n+1} \end{pmatrix} = \begin{pmatrix} x_n \\ y_n \\ z_n \end{pmatrix} - \begin{pmatrix} 2x_n & 0 & 0 \\ y_n & x_n + z_n & y_n \\ 0 & 0 & 2z_n \end{pmatrix}^{-1} \begin{pmatrix} x_n^2 - 1 \\ x_n y_n + y_n z_n - 2 \\ z_n^2 - 1 \end{pmatrix}$

4) $1/60$ 5) $\frac{7}{8}\sqrt{2}$ 6) $\varphi = e^{xy} + x^2 y, e$

7) $R=1$ 8) $f(x, y) = -3xy^2 + g(x^2 y), xy(x-y)$

15/1-14

1) $(2, 1), 3e^{\sqrt{5}}, \frac{9}{\sqrt{2}}e^2, z = ze^2(3x + \frac{7}{2}y - 5)$

2) $f = @ (t, x) [x(z), z - x(1) - x(z)]'$

4) $1/15$ 5) $\frac{\pi}{6}$ 6) $\varphi = e^{x^2 y} + x^2 + 2y,$

$e^5 - e + 5$

7) $\sqrt{\frac{17}{2}}$

8) $f(x, y) = xy + g(x+y)$

$xy + e^{x+y}$