1 Tangencijalna ravnina i normala na plohu

(a) Eksplicitni oblik:
Tangencijalna ravnina na plohu $z = f(x, y)$ u točki $T(x_0, y_0, z_0)$ glasi

$$z - z_0 = f_x(T)(x - x_0) + f_y(T)(y - y_0).$$

Normala:

$$\frac{x - x_0}{f_x(T)} = \frac{y - y_0}{f_y(T)} = \frac{z - z_0}{-1}.$$

(b) Implicitni oblik:
Tangencijalna ravnina na plohu $F(x, y, z) = 0$ u točki $T(x_0, y_0, z_0)$ glasi

$$F_x(T)(x - x_0) + F_y(T)(y - y_0) + F_z(T)(z - z_0) = 0.$$

Normala:

$$\frac{x - x_0}{F_x(T)} = \frac{y - y_0}{F_y(T)} = \frac{z - z_0}{F_z(T)}.$$

2 Dvostruki integral

(a) polarne koordinate:

$$x = r\cos\varphi, \quad y = r\sin\varphi, \quad J = r,$$

(b) eliptičke koordinate:

$$x = ar\cos\varphi, \quad y = br\sin\varphi, \quad J = abr.$$

3 Trostruki integral

(a) cilindrične koordinate:

$$x = r\cos\varphi, \quad y = r\sin\varphi, \quad z = z, \quad J = r,$$

(b) sferne koordinate:

$$x = r\sin\theta\cos\varphi, \quad y = r\sin\theta\sin\varphi, \quad z = r\cos\theta, \quad J = r^2\sin\theta.$$