## Line-element examples for grey samples ($0{,}2 \leq Y_r \leq 5$)

$F(Y_r)$ is called the line-element function of $f(Y_r)$.

The following relations are valid for $Y_r = Y/Y_u = Y/18$:

$$\frac{d[F(Y_r)]}{dY_r} = f(Y_r) \qquad [1]$$

$$F(Y_r) = \int \frac{f'(Y_r)}{f(Y_r)}\, dY_r \qquad [2]$$

Example for the normalized tristimulus value $Y_r = Y/Y_u$:

$$\frac{d[a \ln(1+b\,Y_r)]}{dY_r} = \frac{a\,b}{1+b\,Y_r} \qquad [3]$$

$$a \ln(1+b\,Y_r) = \int \frac{a\,b}{1+b\,Y_r} dY_r \qquad [4]$$