$$D_{\mathrm{ay}}(d,m,y) = \mathrm{mod}\left(d + 2\,(m-1) + \left\lfloor \frac{m}{2} \right\rfloor + \left\lceil \frac{m-8}{12} \right\rceil \mathrm{mod}(m,2) - \left\lceil \frac{m-2}{12} \right\rceil \cdot \left(1 + \left\lceil \frac{\mathrm{mod}(y,4)}{4} \right\rceil + \left(1 - \left\lceil \frac{\mathrm{mod}(y,100)}{100} \right\rceil\right) \cdot \left\lceil \frac{\mathrm{mod}(y,400)}{400} \right\rceil\right) + 5 \cdot \left(\mathrm{mod}\left(\left\lfloor \frac{y-1}{100} \right\rfloor, 4\right) + \left\lfloor \frac{\mathrm{mod}(y-1,100)}{4} \right\rfloor\right) + \mathrm{mod}\left(\mathrm{mod}(y-1,100), 4\right), 7\right)$$