Another note: Suppose X is a continuous uniform random variable defined on $[a,b]$. Now define $Y = cX + d$ where $c > 0$.

So Y is defined on $[ca+d, cb+d]$. Also Y is a continuous uniform random on that interval. Why? We just scaled and shifted X, could think about this as a change in units of X (mult by c part) and adding some fixed d part. Moreover, Y has density

$$f_Y(y) = \begin{cases} \dfrac{1}{(cb+d)-(ca+d)} = \dfrac{1}{c(b-a)}, & \text{for } y \in [ca+d, cb+d] \\ 0 & \text{otherwise} \end{cases}$$

So the point is: scaling and shifting a continuous uniform random variable just yields another continuous uniform random variable.