Theorem The Kolmogorov–Smirnov(n) distribution is a special case of the $U(a, b)$ distribution when $n = 1$, $a = 1/2$, and $b = 1$.

Proof Let the random variable $X \sim U(a, b)$. The cumulative distribution function of X is

$$F(x) = \frac{x - a}{b - a} \qquad a < x < b.$$

Substituting $a = 1/2$ and $b = 1$ yields

$$F(x) = \frac{x - 1/2}{1/2} = 2x - 1 \qquad 1/2 < x < 1.$$

which is the cumulative distribution function of a Kolmogorov–Smirnov random variable with $n = 1$.

APPL verification: The APPL statements

```
X := KSRV(1);
Y := UniformRV(1 / 2, 1);
CDF(X);
CDF(Y);
```

yield identical cumulative distribution functions.