Theorem The Bernoulli distribution is a special case of the binomial distribution when $n = 1$.

Proof The binomial distribution has probability mass function

$$f(x) = \binom{n}{x} p^x (1-p)^{n-x} \qquad x = 0, 1, 2, \ldots, n.$$

When $n = 1$, this reduces to

$$f(x) = p^x (1-p)^{1-x} \qquad x = 0, 1,$$

which is the probability mass function of the Bernoulli distribution.

APPL verification: The APPL statements

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BinomialRV(1, p);
BernoulliRV(p);
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yield the probability mass functions

$$f(x) = \frac{p^x \, (1-p)^{1-x}}{(1-x)! \, x!} \qquad x = 0, 1,$$

and

$$f(x) = \begin{cases} 1-p & x = 0 \\ p & x = 1, \end{cases}$$

which are equivalent.