$$
\begin{array}{r}
\sum_{x} x f(x) \\
\sum_{x}(x-\mu)^{2} f(x) \\
E\left(X^{2}\right)-[E(X)]^{2}=E\left(X^{2}\right)-\mu^{2}
\end{array}
$$

The followings are for ? distribution:

$$
\begin{aligned}
f(x) & =\binom{n}{x} p^{x}(1-p)^{n-x} \\
E(X) & =n p \\
\operatorname{Var}(X) & =n p(1-p) \\
\binom{n}{x} & =\frac{n!}{x!(n-x)!}
\end{aligned}
$$

The following is for ? distribution:

$$
f(x)=\frac{\mu^{x} e^{-\mu}}{x!}
$$

The following is for ? distribution:

$$
f(x)= \begin{cases}\frac{1}{b-a} & \text { for } a \leq x \leq b \\ 0 & \text { otherwise }\end{cases}
$$

The following is for ? distribution:

$$
f(x)=\frac{1}{\sigma \sqrt{2 \pi}} e^{-\left(\frac{1}{2}\right) \frac{(x-\mu)^{2}}{\sigma^{2}}}
$$

The following is for ? distribution:

$$
f(z)=\frac{1}{\sqrt{2 \pi}} e^{-\left(\frac{1}{2}\right) z^{2}}
$$

