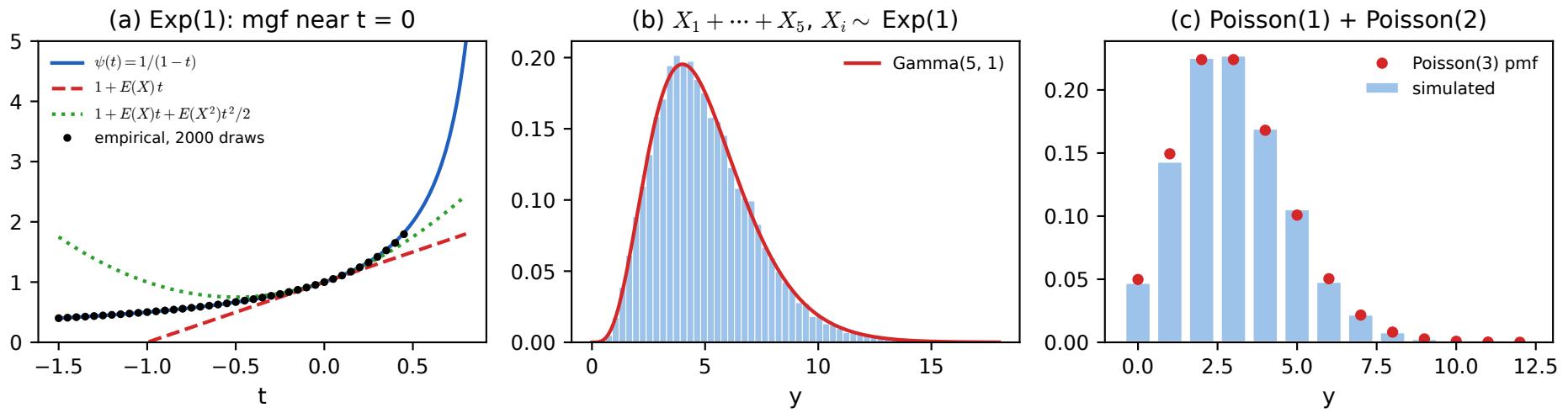

(a) Exp(1): mgf near t = 0
$\psi(t) = 1/(1-t)$
$1 + E(X)\,t$
$1 + E(X)t + E(X^2)t^2/2$
empirical, 2000 draws
t
(b) $X_1 + \cdots + X_5$, $X_i \sim$ Exp(1)
Gamma(5, 1)
y
(c) Poisson(1) + Poisson(2)
Poisson(3) pmf
simulated
y