Figure 1: Distributions of q given values of $\mu = 0$ and $\mu = 1$ using values of σ_0 and σ_1 based on the values of $s = 5$ and $b = 10$.
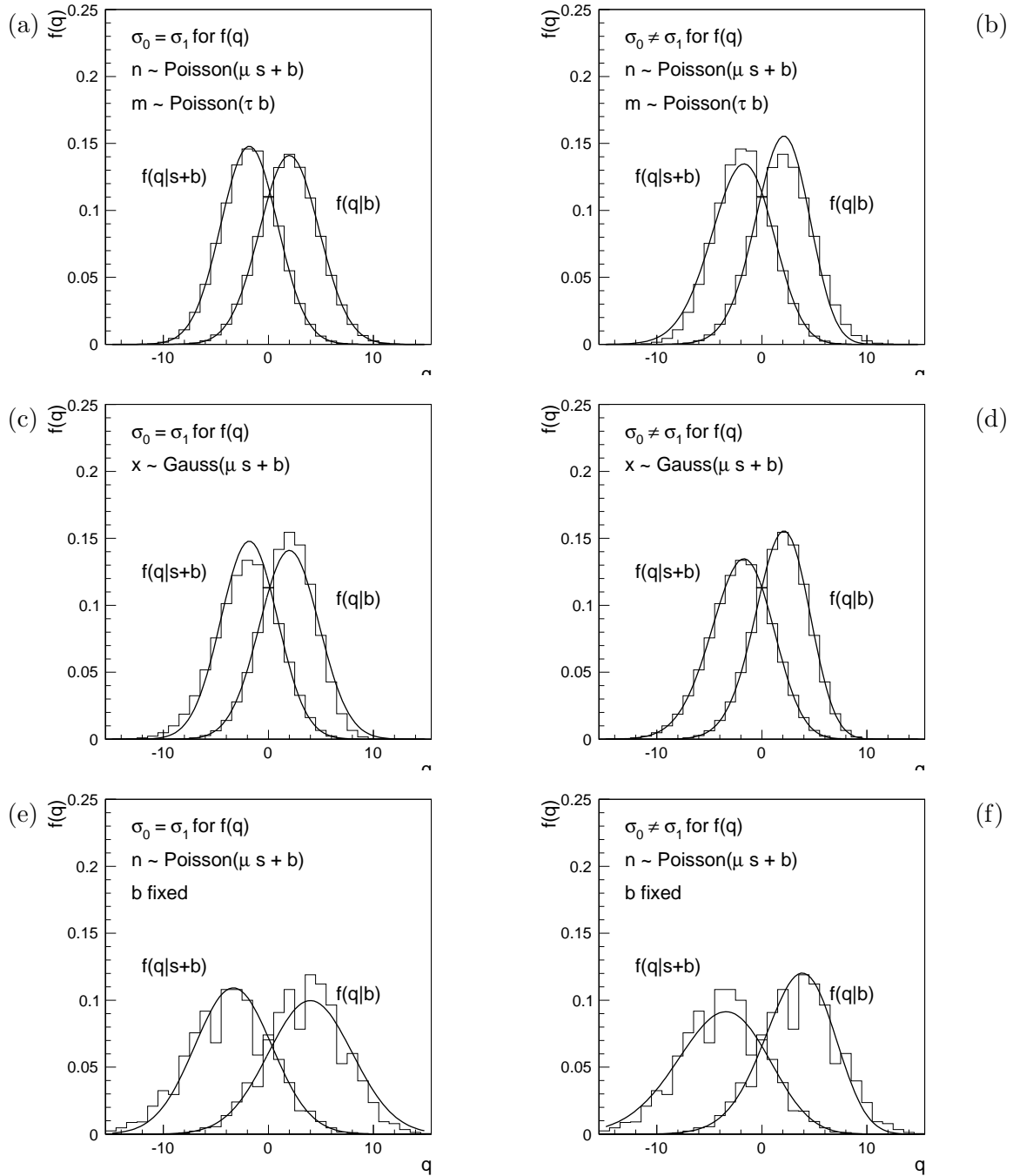
Figure 2: Distributions of q given values of $\mu = 0$ and $\mu = 1$ using values of σ_0 and σ_1 based on the values of $s = 20$ and $b = 100$.

(a)
$\sigma_0 = \sigma_1$ for f(q)
n ~ Poisson(μ s + b)
m ~ Poisson(τ b)
f(q|s+b)
f(q|b)

(b)
$\sigma_0 \neq \sigma_1$ for f(q)
n ~ Poisson(μ s + b)
m ~ Poisson(τ b)
f(q|s+b)
f(q|b)

(c)
$\sigma_0 = \sigma_1$ for f(q)
x ~ Gauss(μ s + b)
f(q|s+b)
f(q|b)

(d)
$\sigma_0 \neq \sigma_1$ for f(q)
x ~ Gauss(μ s + b)
f(q|s+b)
f(q|b)

(e)
$\sigma_0 = \sigma_1$ for f(q)
n ~ Poisson(μ s + b)
b fixed
f(q|s+b)
f(q|b)

(f)
$\sigma_0 \neq \sigma_1$ for f(q)
n ~ Poisson(μ s + b)
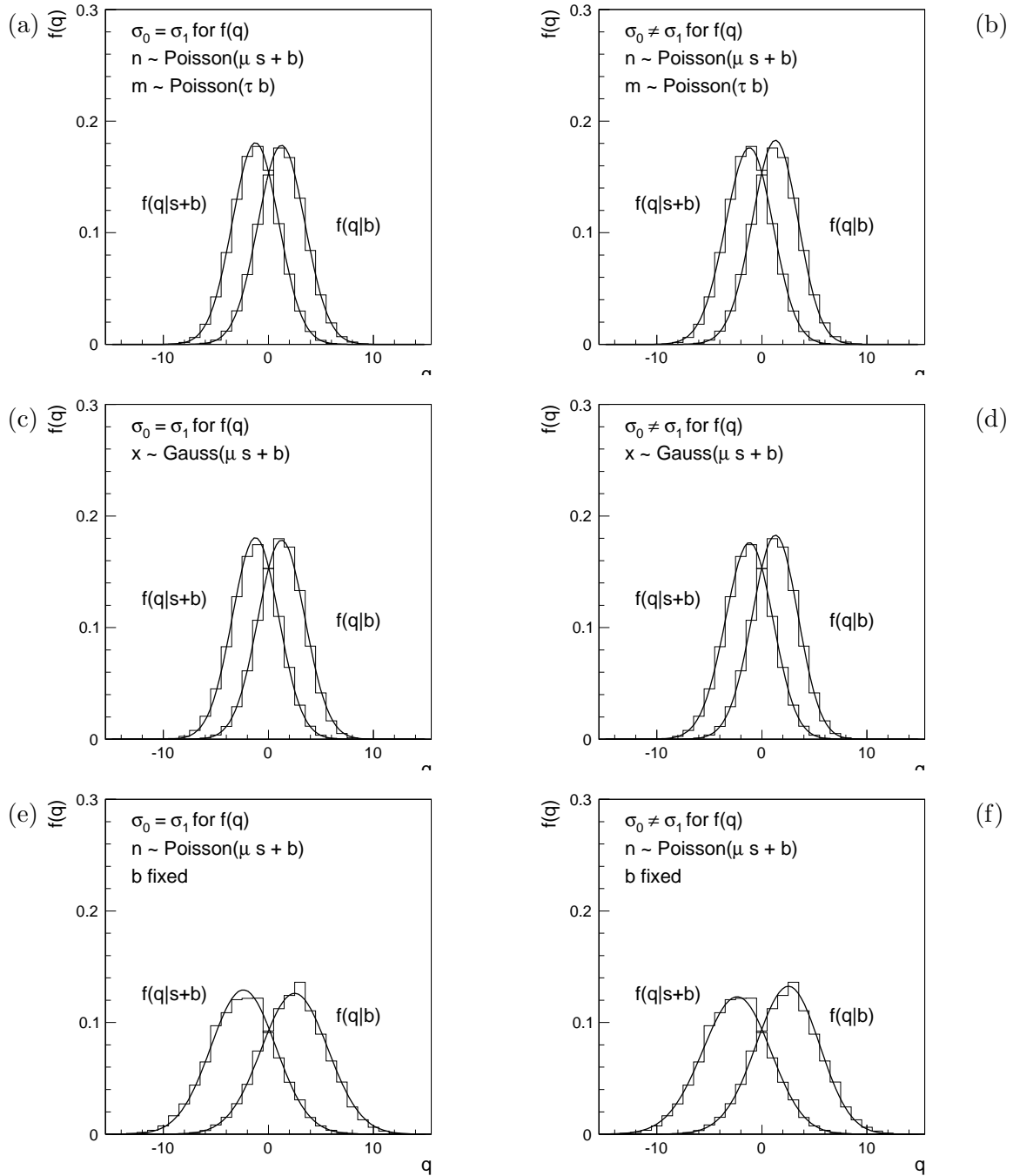b fixed
f(q|s+b)
f(q|b)

Figure 3: Distributions of q given values of $\mu = 0$ and $\mu = 1$ using values of σ_0 and σ_1 based on the values of $s = 50$ and $b = 1000$.