

Example - General Normal

If X is a normal distribution with parameters $\mu = 3$ and $\sigma^2 = 9$ find

1) $P(2 < X < 5)$

2) $P(X > 0)$

3) $P(|X - 3| > 6)$

Example - General Normal Distribution

Suppose $X \sim N(\mu, \sigma^2)$.

a) What is $P(|X - \mu| \leq \sigma)$?

b) What is $P(|X - \mu| \leq 2\sigma)$?

Example - Normal Distribution

The annual rainfall (in cm) in Toronto is normally distributed with $\mu = 140$ and $\sigma = 20$.

What is the probability that starting with this year it will take over 10 years before a year occurs with an annual rainfall of 100 cm?