

Normal Distribution

The Toy Car Example



The Problem

Say a toy car goes an average of 3,000 yards between recharges, with a standard deviation of 50 yards (i.e., $\mu = 3,000$ and $\sigma = 50$). What is the probability that the car will go more than 3,100 yards without recharging?

What We Know

- We need to solve the problem $P(x > 3100)$.
- So we solve $P(z > (3100 - 3000)/50)$.
- Solving we have: $P(z > 2) = .5 - P(0 < z < 2)$
 $= .5 - P(0 < z < 2.00) = .5 - .4772 = .0228$

