

## Distribution problems guide

1. Define random variable: usually, read exactly what problem asks for and use that
2. Check whether discrete or continuous
  - "Number of"  $\rightarrow$  discrete
  - Time elapsed, or some other measurement: continuous
3. Choose appropriate model

## Normal distribution

$$\begin{aligned}P(|Z| \geq k) &= 2P(Z \geq k) \\&= 2(1 - P(Z \leq k)) \\&= 2 - 2P(Z \leq k)\end{aligned}$$

$$\begin{aligned}P(|Z| \leq k) &= 1 - 2P(Z \geq k) \\&= 1 - 2(1 - P(Z \leq k)) \\&= 2P(Z \leq k) - 1\end{aligned}$$