

# Normal Random Variables

---

## 5.1 Using the Z-table

1. Find the probability that a standard-normal random variable is between zero and 3.03.  $P(0 < Z < 3.03) = ?$
2. Find the probability that a standard-normal random variable is between -1.72 and 1.84.  $P(-1.72 < Z < 1.84) = ?$
3. Find the probability that a standard-normal random variable is between 1.02 and 1.98.  $P(1.02 < Z < 1.98) = ?$
4. Find the probability that a standard-normal random variable is less than -2.81.  $P(Z < -2.81) = ?$
5. Find the probability that a standard-normal random variable is greater than -1.16.  $P(Z > -1.16) = ?$
6. Find the probability that a standard-normal random variable is less than -2.33 or more than 2.33.  $P(Z < -2.33 \text{ or } Z > 2.33) = ?$

Answers:

1.  $P(0 < Z < 3.03) = 0.4988$

2.  $P(-1.72 < Z < 1.84) = 0.9244$

3.  $P(1.02 < Z < 1.98) = 0.1300$

4.  $P(Z < -2.81) = 0.0025$

5.  $P(Z > -1.16) = 0.8770$

6.  $P(Z < -2.33 \text{ or } Z > 2.33) = P(Z < -2.33) + P(Z > 2.33) = 0.0198$