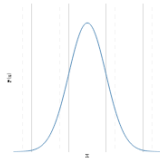




Calculate probabilities using normal distributions

1

For a random variable represented by this model, is the probability of a single specific value, $P(x)$, meaningful?



- A $P(x)$ is meaningful B $P(x)$ is not meaningful

2

A reaction time of 342 ms comes from data with mean 320 ms and standard deviation 10 ms. Use $z = (x - \text{mean}) / \text{standard deviation}$.

A

Negative

B

Positive

3

An exam mark is 0.5 standard deviations above the mean.

A

-0.5

B

1.0

C

0.5

D

1.5

4

An exam mark of 114 comes from data with mean 120 and standard deviation 20. Use $z = (x - \text{mean}) / \text{standard deviation}$.

A

0.3

B

-0.3

C

-0.8

D

0.7

5

An exam mark of 96 comes from data with mean 100 and standard deviation 10.

A

-0.4

B

0.6

C

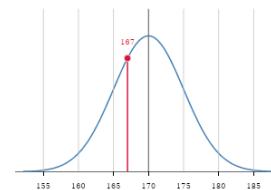
-0.9

D

0.4

6

Mean 170 cm, standard deviation 5 cm. Find the z-score of the marked point.



A -1.1

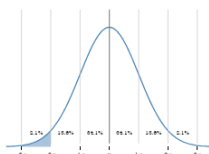
B -0.6

C 0.6

D -1.0

7

What percentage of the data lies between 3 standard deviations below the mean (-3σ) and 2 standard deviations below the mean (-2σ) in this normal curve?



A 2.3%

B 2.1%

C 97.9%

D 15.7%

8

The daily high temperatures in degrees are normally distributed with a mean of 18 and a standard deviation of 3. What percentage of days are between 18 and 21?

A

68.2%

B

34.1%

C

65.9%

D

47.7%



Calculate probabilities using normal distributions

9

Find the percentage.

A test score has a z-score of 2.43.

What percentage of test scores is above it?

z	0.01	0.02	0.03
2.2	0.9864	0.9868	0.9871
2.3	0.9896	0.9898	0.9901
2.4	0.9920	0.9922	0.9925

- A 0.01% B 0.99% C 0.75% D 99.25%

10

Read the z-table value.

A height of 180 cm has mean 170 cm, SD 5 cm.

Find the z-score, then read its z-table value.

z	0.00	0.01	0.02
1.8	0.9641	0.9649	0.9656
1.9	0.9713	0.9719	0.9726
2.0	0.9772	0.9778	0.9783

- A 0.9772 B 0.9641 C 0.9649 D 0.9656

11

Find the percentage.

A reaction time of 324.4 ms has mean 280 ms, SD 20 ms.

What percentage of reaction times is above it?

z	0.01	0.02	0.03
2.2	0.9864	0.9868	0.9871
2.3	0.9896	0.9898	0.9901
2.4	0.9920	0.9922	0.9925

- A 98.68% B 0.01% C 0.99% D 1.32%

12

The test scores in a large class are normally distributed with a mean of 70 and a standard deviation of 4.

- | | |
|------------|------------|
| A
83.9% | B
84.1% |
| C
50% | D
15.9% |