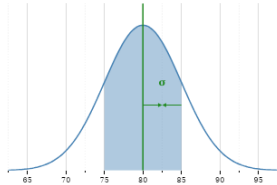


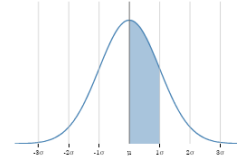
Apply properties of the normal distribution

- 1** What are the mean and standard deviation of this bell curve?



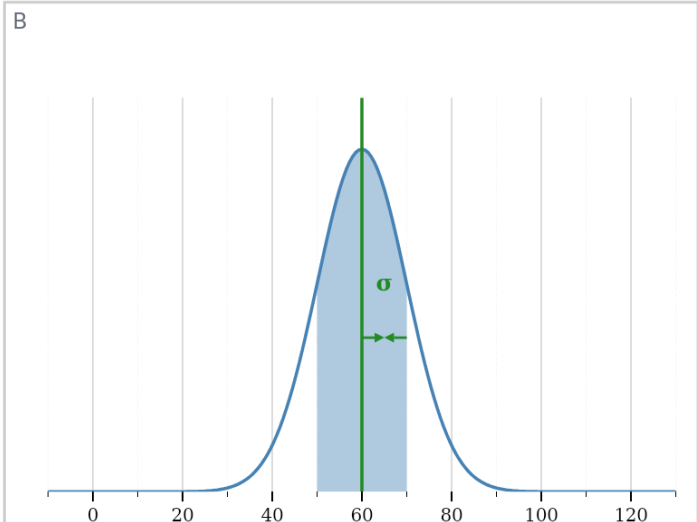
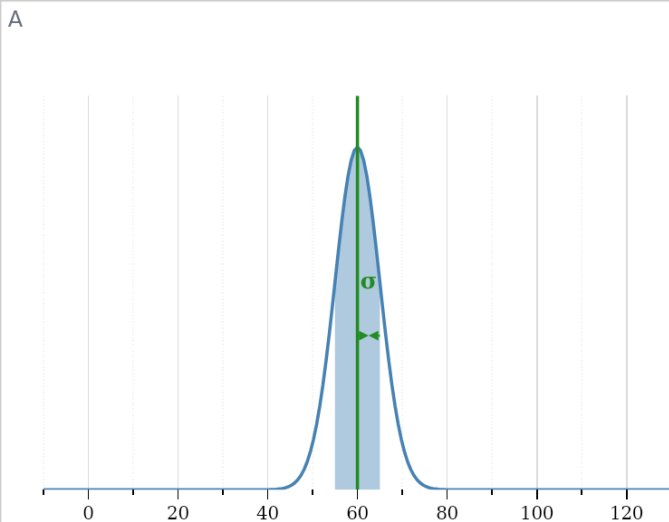
- A Mean = 90, SD = 5 B Mean = 80, SD = 5 C Mean = 80, SD = 10 D Mean = 5, SD = 80

- 2** What percentage of the data lies between the mean and 1 standard deviation above the mean ($+1\sigma$) in this normal curve?



- A 65.9% B 68.2% C 34.1% D 47.7%

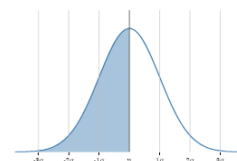
- 3** Which bell curve matches these values?
standard deviation = 5



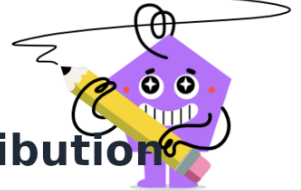
- 4** $+2\sigma$ to $+3\sigma$

- | | |
|------------|------------|
| A
2.1% | B
97.9% |
| C
15.7% | D
2.3% |

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

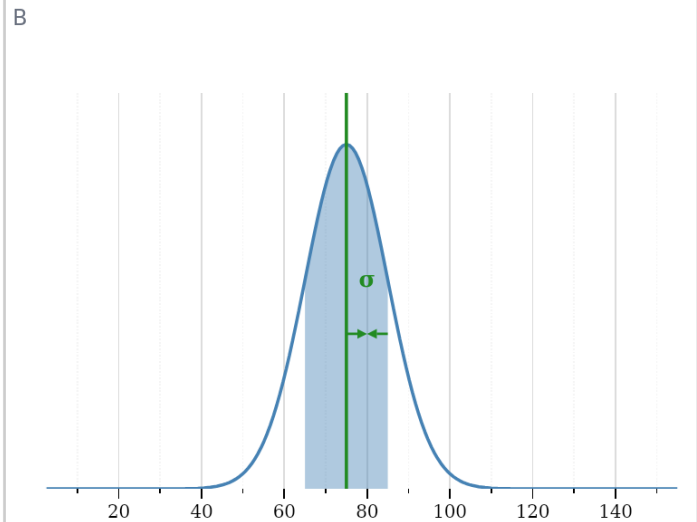
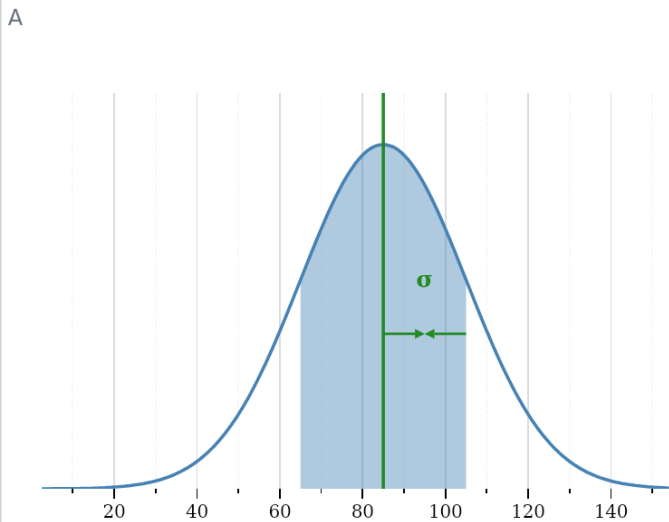


- A 47.7% B 49.8% C 50.2% D 50%



Apply properties of the normal distribution

- 6** Which bell curve matches these values?
mean = 75, standard deviation = 10



- 7** mean to $+2\sigma$

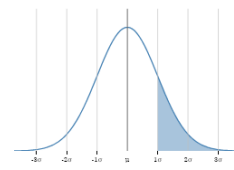
A
52.3%

B
47.7%

C
13.6%

D
81.8%

- 8** What percentage of the data lies more than 1 standard deviation above the mean ($+1\sigma$) in this normal curve?



A 84.1%

B 50%

C 2.3%

D 15.9%

- 9** below -1σ

A
2.3%

B
84.1%

C
15.9%

D
15.7%

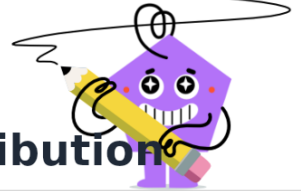
- 10** A exam mark is 0.5 standard deviations below the mean.

A
-0.5

B
-1.0

C
0.5

D
-0.2

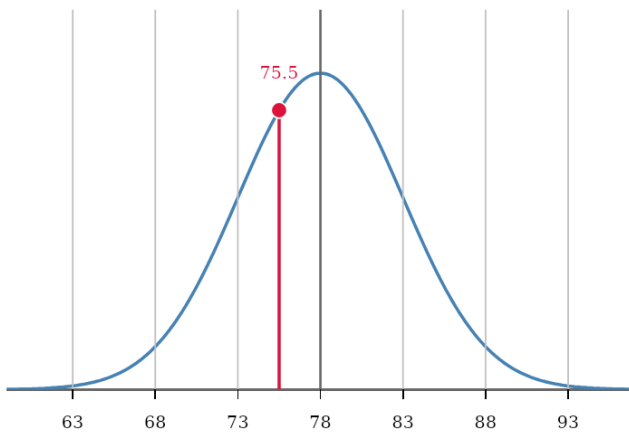


Apply properties of the normal distribution

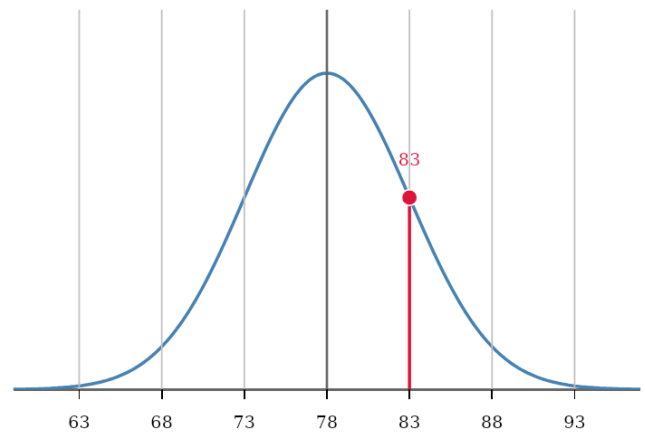
11

The test scores are normally distributed with mean 78 and standard deviation 5. Z-score of 1.0.

A



B

**12**

A exam mark of 100 comes from data with mean 120 and standard deviation 10. Use $z = (x - \text{mean}) / \text{standard deviation}$.

A

2.0

B

-2.5

C

-1.7

D

-2.0

13

A exam mark of 140 comes from data with mean 100 and standard deviation 20.

A

-2.0

B

2.0

C

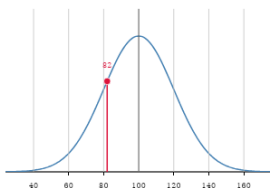
1.7

D

2.5

14

Mean 100, standard deviation 20. Find the z-score of the marked point.



A

-1.0

B

-0.9

C

0.9

D

-1.4

15

Read the z-table value.

A height of 186 cm has mean 170 cm, SD 10 cm.
Find the z-score, then read its z-table value.

z	0.00	0.01	0.02
1.4	0.9192	0.9207	0.9222
1.5	0.9332	0.9345	0.9357
1.6	0.9452	0.9463	0.9474

A

0.9222

B

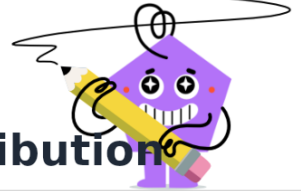
0.9207

C

0.9192

D

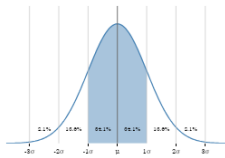
0.9452



Apply properties of the normal distribution

16

What percentage of the data lies between 1 standard deviation below the mean (-1σ) and 1 standard deviation above the mean ($+1\sigma$) in this normal curve?



- A 31.8% B 34.1% C 68.2% D 81.8%

17

The adult heights in centimetres are normally distributed with a mean of 160 and a standard deviation of 5. What percentage of people are between 160 and 175?

- A 83.9% B 49.8%
C 50.2% D 15.7%

18

Find the percentage.

A height of 174 cm has mean 165 cm, SD 5 cm.
What percentage of heights is above it?

z	0.07	0.08	0.09
1.7	0.9616	0.9625	0.9633
1.8	0.9693	0.9699	0.9706
1.9	0.9756	0.9761	0.9767

- A 0.96% B 0.04% C 3.67% D 96.33%

19

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

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

20

-3σ to mean

- A 47.7% B 50.2%
C 49.8% D 50%