

FREE SAMPLE: THE FIRST 3 QUESTIONS

MATHEMATICS AND STATISTICS — 30 QUESTIONS

Multiple choice · 45 minutes

Work through the questions in order, but do not spend too long on any one. Mark your best answer for every question, then check your work against the worked solutions.

1. In which quadrant of the coordinate plane is the point $(-3, 4)$?

- A the second quadrant
- B the fourth quadrant
- C the third quadrant
- D the first quadrant

2. Round 18,196,357 to the nearest 10^3 .

- A 18,197,000
- B 18,196,000
- C 18,200,000
- D 18,196,400

3. Which power of 10 is equal to 100?

- A 10^3
- B 10^2
- C 10^{10}
- D 10^1

THE WORKED ANSWERS TO THOSE 3 QUESTIONS

1. In which quadrant of the coordinate plane is the point $(-3, 4)$? [Four quadrants]

Correct answer: A — the second quadrant

- Quadrants go anticlockwise from the top right: first $(+, +)$, second $(-, +)$, third $(-, -)$, fourth $(+, -)$.
- $(-3, 4)$ is in the second quadrant.
- Why the other options are wrong:
- B (the fourth quadrant): Check the signs of x and y : x is negative and y is positive.
- C (the third quadrant): Check the signs of x and y : x is negative and y is positive.
- D (the first quadrant): Check the signs of x and y : x is negative and y is positive.

Skill: Four quadrants

KEY TAKEAWAY

The signs of x and y tell you the quadrant.

2. Round 18,196,357 to the nearest 10^3 . [Rounding]

Correct answer: B — 18,196,000

- 10^3 is the place you are rounding to; look at the digit to its right.
- 18,196,357 rounds to 18,196,000.
- Why the other options are wrong:
- A (18,197,000): Always rounded up.
- C (18,200,000): Rounded to 10^4 , a bigger place.
- D (18,196,400): Rounded to 10^2 , a smaller place.

Skill: Rounding

KEY TAKEAWAY

To round to a power of 10, look at the digit one place to the right: 5 or more rounds up.

3. Which power of 10 is equal to 100? [Powers of 10]

Correct answer: B — 10^2

- 100 has 2 zeros after the 1, so it is 10 multiplied by itself 2 times.
- $100 = 10^2$.
- Why the other options are wrong:
- A (10^3): That has one more zero than the number.
- C (10^{10}): The power counts the zeros, it is not the number itself.
- D (10^1): That has one fewer zero than the number.

Skill: Powers of 10

KEY TAKEAWAY

10 to the power k is a 1 followed by k zeros.