

3. Coordinate geometry

Starter Quiz · 课前小测

IGCSE Mathematics

Name: _____ Score: _____

1. The point $(-4, 3)$ is in which quadrant?

- ☐ I
- ☐ II
- ☐ III
- ☐ IV

2. Find the gradient of the line through $(1, 2)$ and $(4, 11)$.

3. Find the length of the segment from $(1, 2)$ to $(4, 6)$.

4. Rearrange $5x + 4y = 8$ into $y = mx + c$. What is c (the y -intercept)?

5. A line is parallel to $y = 4x - 1$ and passes through $(1, -3)$. In $y = 4x + c$, what is c ?

6. The point where the x -axis and y -axis cross is called the _____.

7. A line that goes down as you move to the right has a gradient that is:

- ☐ negative
- ☐ positive
- ☐ zero
- ☐ undefined

8. The midpoint of $(1, 2)$ and $(4, 6)$ is $(a, 4)$. What is a ?

9. A line has gradient $3/2$. The gradient of a line perpendicular to it is:

- ☐ $-2/3$
- ☐ $2/3$
- ☐ $-3/2$
- ☐ $3/2$

10. In $y = mx + c$, the letter m stands for the:

- ☐ gradient
- ☐ y -intercept
- ☐ x -value
- ☐ midpoint

1. **II**

Negative x (left) and positive y (up) $\rightarrow$ quadrant II (top-left).

2. **3**

$$(11 - 2)/(4 - 1) = 9/3 = 3.$$

3. **5**

$$\sqrt{((4-1)^2 + (6-2)^2)} = \sqrt{(9 + 16)} = \sqrt{25} = 5.$$

4. **2**

$$4y = -5x + 8, \text{ so } y = -(5/4)x + 2; \text{ the intercept is } 2.$$

5. **-7**

$$\text{Parallel} \rightarrow \text{same gradient } 4. \quad -3 = 4(1) + c, \text{ so } c = -7.$$

6. **origin**

The origin is the point $(0, 0)$ where the two axes meet.

7. **negative**

Falling to the right means the change in y is negative for a positive change in x , so the gradient is negative.

8. **2.5**

$$\text{Average the } x\text{-values: } (1 + 4)/2 = 2.5.$$

9. **-2/3**

$$\text{Flip and change sign: perpendicular gradient} = -1 \div (3/2) = -2/3.$$

10. **gradient**

m is the gradient (steepness); c is the y -intercept.