

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

☐ I

☐ II

☐ IV

☐ III

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

☐ x -value

☐ midpoint

☐ y -intercept

☐ gradient

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

☐ $2/3$

☐ $3/2$

☐ $-2/3$

☐ $-3/2$

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. gradient

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

10. $-2/3$

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