

Geometry - Coordinate Geometry and Proofs - Quiz

Common Core G-GPE.B.4, G-GPE.B.5, G-GPE.B.6, G-GPE.B.7 · maths-pdf.fr/en/

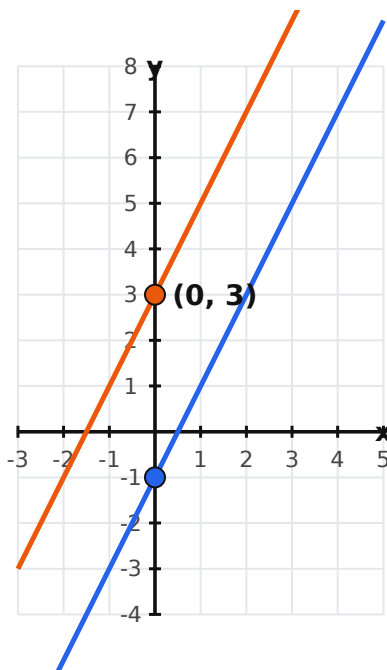
Name: _____ Class: _____ Date: ____/____/____

Test your understanding of coordinate geometry with this 10-question multiple-choice quiz. Each question has one correct answer, and the explanation after it names the typical mistake behind the wrong choices. Take it after the lesson or before the test.

Geometry · Common Core State Standards: **G-GPE.B.4, G-GPE.B.5, G-GPE.B.6, G-GPE.B.7**

Questions

Question 1



Parallel lines have the same slope.

The lines are parallel. If one has slope 2, what is the slope of the other?

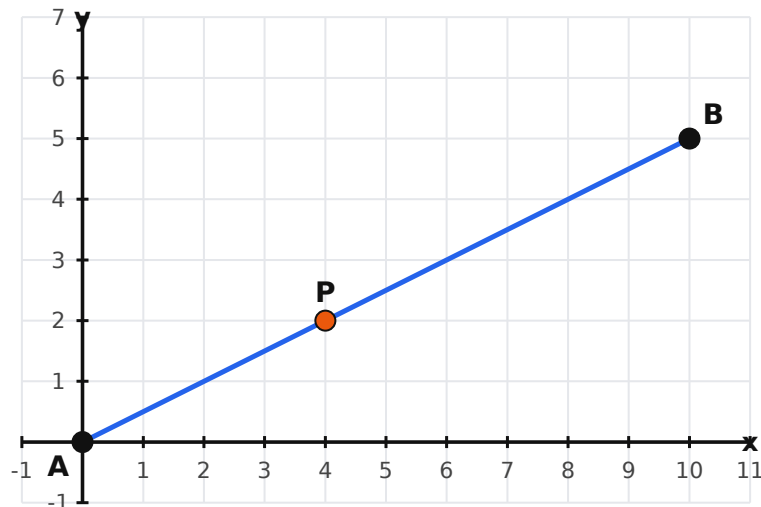
- A. 2
- B. -2
- C. $\frac{1}{2}$
- D. $-\frac{1}{2}$

Question 2

What is the slope of a line perpendicular to $y = (2/5)x + 1$?

- A. $5/2$
- B. $-2/5$
- C. $2/5$
- D. $-5/2$

Question 3



P splits AB in the ratio 2 : 3 from A.

P divides AB with A(0, 0) and B(10, 5) in the ratio 2 : 3. What is P?

- A. (6, 3)
- B. (4, 2)
- C. (5, 2.5)
- D. (2, 3)

Question 4

What is the distance between (1, 1) and (4, 5)?

- A. 7
- B. 5
- C. 25
- D. 3.5

Question 5

Which test shows that a quadrilateral is a parallelogram?

- A. One pair of sides has equal slopes
- B. The diagonals have equal slopes
- C. Both pairs of opposite sides have equal slopes
- D. All sides have different lengths

Question 6

A triangle has vertices $(0, 0)$, $(4, 0)$ and $(4, 3)$. What is its perimeter?

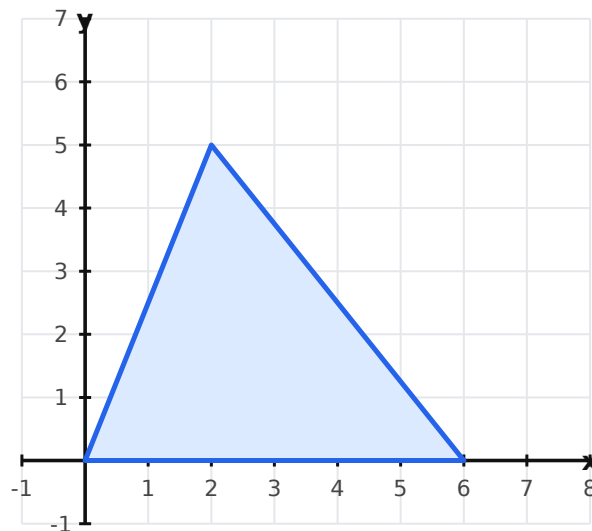
- A. 12
- B. 7
- C. 14
- D. 6

Question 7

Lines with slopes 3 and $-1/3$ are

- A. Parallel
- B. The same line
- C. Neither
- D. Perpendicular

Question 8



A triangle has vertices $(0, 0)$, $(6, 0)$ and $(2, 5)$. What is its area?

- A. 15
- B. 30
- C. 12
- D. 20

Question 9

The point $\frac{1}{4}$ of the way from $(0, 0)$ to $(12, 8)$ is

- A. $(4, 2)$
- B. $(9, 6)$
- C. $(3, 2)$
- D. $(6, 4)$

Question 10

In a coordinate proof, equal distance between two sides is used to show that a triangle is

- A. Right
- B. Isosceles
- C. Scalene
- D. Obtuse

Answers

1. **A** – Parallel lines have equal slopes.
2. **D** – Opposite reciprocal of $\frac{2}{5}$ is $-\frac{5}{2}$. $\frac{5}{2}$ changes only the reciprocal and not the sign.
3. **B** – P is $\frac{2}{5}$ of the way from A: (4, 2). Using $\frac{3}{5}$ gives (6, 3).
4. **B** – The square root of 3 squared plus 4 squared is 5.
5. **C** – Two pairs of parallel sides define a parallelogram.
6. **A** – The sides are 4, 3 and 5.
7. **D** – $3 \times (-\frac{1}{3}) = -1$, so the lines are perpendicular.
8. **A** – Base 6 and height 5 give $(\frac{1}{2})(6)(5) = 15$.
9. **C** – One quarter of 12 is 3 and one quarter of 8 is 2.
10. **B** – Two equal side lengths make a triangle isosceles.

Remember

- Parallel lines: equal slopes. Perpendicular lines: slopes multiply to -1.
- Point P with $AP:PB = a:b$ is $\frac{a}{a+b}$ of the way from A to B.
- Distance: square root of $(x_2 - x_1)^2$ plus $(y_2 - y_1)^2$ squared.
- Perimeter = sum of distances; area uses base times height or decomposition.
- Coordinate proofs test slopes (parallel, perpendicular) and distances (equal sides).