

Geometry - Parallel Lines and Transversals - Quiz

Common Core G-CO.C.9 · maths-pdf.fr/en/

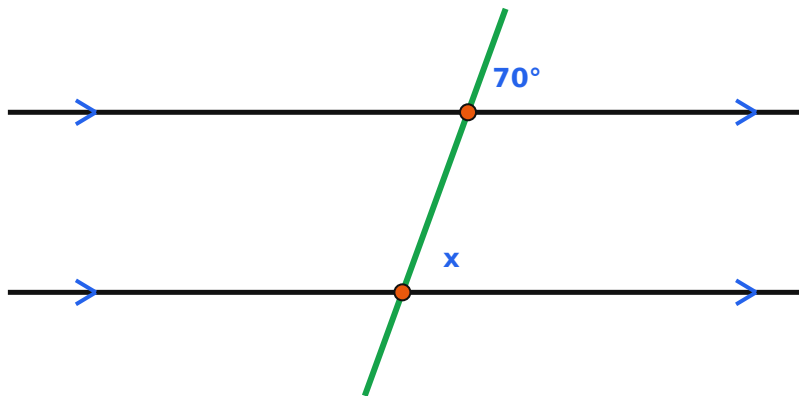
Name: _____ Class: _____ Date: ____/____/____

Test your understanding of parallel lines and transversals 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-CO.C.9**

Questions

Question 1



The horizontal lines are parallel. What is x ?

- A. 110
- B. 70
- C. 20
- D. 140

Question 2

Parallel lines are cut by a transversal. Same-side interior angles measure $3x$ and $2x$. What is x ?

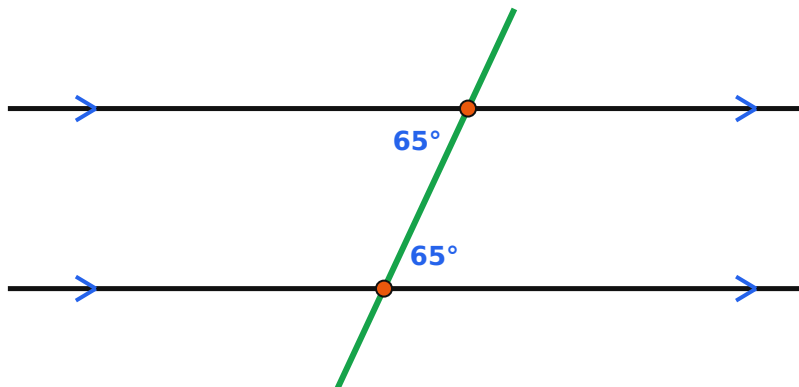
- A. 36
- B. 30
- C. 18
- D. 72

Question 3

Two lines intersect and one angle measures 133 degrees. What is the measure of the angle next to it (linear pair)?

- A. 133 degrees
- B. 57 degrees
- C. 47 degrees
- D. 90 degrees

Question 4



Alternate interior angles are both 65 degrees. What can you conclude?

- A. The lines are perpendicular
- B. The two lines are parallel
- C. The transversal is perpendicular
- D. Nothing, the angles are not special

Question 5

Which angle pair is always congruent, even when the lines are not parallel?

- A. Corresponding angles
- B. Alternate interior angles
- C. Same-side interior angles
- D. Vertical angles

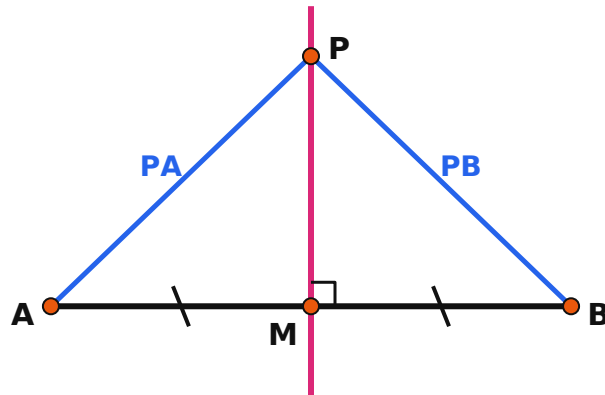
Question 6

Parallel lines are cut by a transversal. Alternate interior angles are $(6x - 10)$ and $(4x + 18)$ degrees. What is x ?

- A. 4
- B. 14

- C. 7
- D. 28

Question 7



P is on the perpendicular bisector of AB and $PA = 9$. What is PB?

- A. 9
- B. 18
- C. 4.5
- D. Cannot be found

Question 8

Corresponding angles measure 81 degrees and 84 degrees. What is true?

- A. The lines are not parallel
- B. The lines are parallel
- C. The lines are perpendicular
- D. The angles are supplementary

Question 9

What is the midpoint of the segment from (2, -4) to (10, 6), the point the perpendicular bisector passes through?

- A. (8, 2)
- B. (4, 5)
- C. (6, 1)
- D. (6, 5)

Question 10

A transversal crosses two parallel lines. One of the eight angles is 48 degrees. How many of the eight angles measure 48 degrees?

- A. 2
- B. 8
- C. 1
- D. 4

Answers

1. **B** - Angles 2 and 6 are corresponding angles, so they are congruent. The value 110 would be a supplement.
2. **A** - Same-side interior angles add to 180, so $5x = 180$ and $x = 36$.
3. **C** - A linear pair adds to 180 degrees, so $180 - 133 = 47$. The vertical angle would measure 133 degrees.
4. **B** - Congruent alternate interior angles prove the lines are parallel (converse of the theorem).
5. **D** - Vertical angles are congruent whenever two lines cross. The other pairs need parallel lines.
6. **B** - Set $6x - 10 = 4x + 18$, so $2x = 28$ and $x = 14$. The value 28 is $2x$.
7. **A** - Points on a perpendicular bisector are equidistant from both endpoints, so $PB = PA = 9$.
8. **A** - Parallel lines make corresponding angles congruent, and 81 is not 84.
9. **C** - Average the coordinates: $(2 + 10)/2 = 6$ and $(-4 + 6)/2 = 1$.
10. **D** - The angle, its vertical angle, and the two matching angles at the other line all measure 48. The other four measure 132.

Remember

- Vertical angles are congruent, and a linear pair adds to 180 degrees.
- Parallel lines: corresponding and alternate interior angles are congruent.
- Parallel lines: same-side interior angles are supplementary.
- If those angle conditions hold for a transversal, the two lines are parallel.
- Points on the perpendicular bisector of a segment are equidistant from its endpoints.