

Geometry - Parallel Lines and Transversals - Test

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

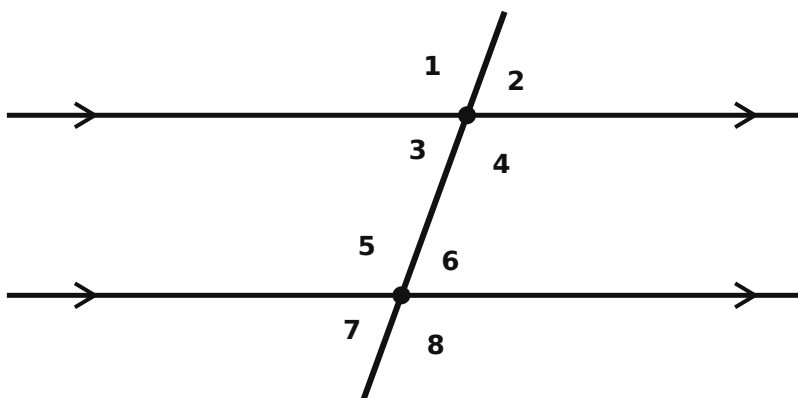
Name: _____ Class: _____ Date: ____/____/____

This 45-minute test checks angles formed by a transversal, vertical angles and perpendicular bisectors. It has 9 questions worth 20 points in total. Show every step of the work, label diagrams, and include units where they apply. Calculators are allowed unless the teacher says otherwise.

About this test

- Grade: Geometry
- Chapter: Parallel Lines and Transversals
- Standards: G-CO.C.9
- Time: 45 minutes
- Total: 20 points

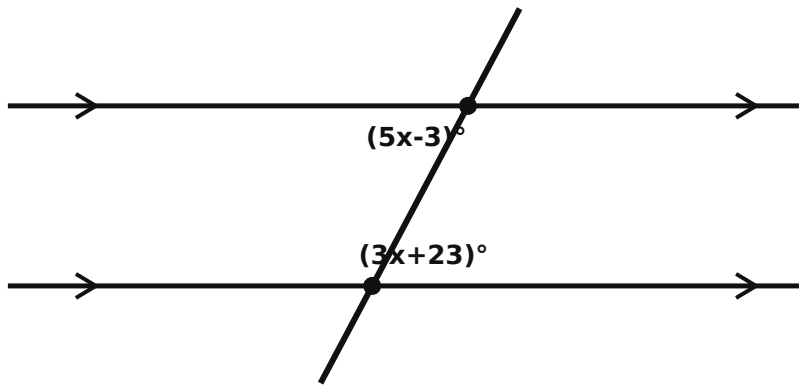
Question 1 - Name the pairs [2 pts]



Parallel lines cut by a transversal.

- Name the relationship of angles 3 and 5. (1 point)
- Name the relationship of angles 1 and 8. (1 point)

Question 2 - Solve for x [3 pts]



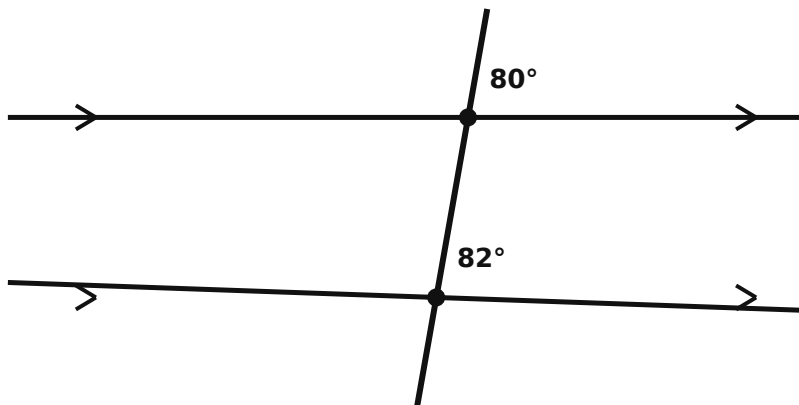
Parallel lines.

- Find x . (1 point)
- Find the measure of each angle. (1 point)
- Find the measure of the angle that forms a linear pair with angle $(5x - 3)$. (1 point)

Question 3 - Vertical and linear [2 pts]

Two lines intersect. One angle is $(2x+20)^\circ$ and its adjacent angle is $(3x-10)^\circ$. Find x and all four angle measures.

Question 4 - Prove parallel [2 pts]



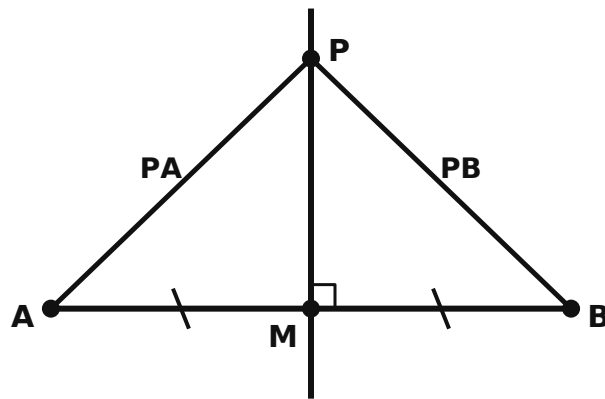
Two lines and a transversal.

A transversal crosses two lines, and a pair of corresponding angles measures 80° and 82° . Are the lines parallel? Explain.

Question 5 - Same-side interior [2 pts]

Parallel lines are cut by a transversal. Same-side interior angles measure $(7x + 3)^\circ$ and $(5x + 9)^\circ$. Find x and both angle measures.

Question 6 - Perpendicular bisector [3 pts]



Line PM is the perpendicular bisector of AB.

- a. $PA = 3x + 4$ and $PB = 5x - 8$. Find x and PA . (2 points)
- b. $AB = 24$. Find the length PM if $PA = 20$. (1 point)

Question 7 - Midpoint and slope [2 pts]

Find the equation of the perpendicular bisector of the segment with endpoints $(0, 2)$ and $(8, 6)$.

Question 8 - Road angles [2 pts]

A bike path crosses two parallel roads. It makes a 73° angle with the first road. Find the measure of the alternate interior angle on the second road and of the same-side interior angle.

Question 9 - Explain [2 pts]

Explain why vertical angles are congruent, using the fact that a linear pair adds to 180° .