

Geometry — Topic 1 Review

Squares · Plotting · Movement · Slope · Parallel & Perpendicular · Constructions · Distance
60 minutes

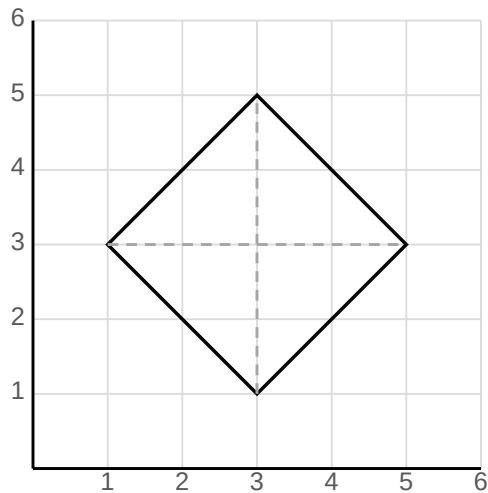
Name

Date

Period

GRADE

Q0. The rhombus. (3 points) Look at the rhombus and its two dashed diagonals. Write THREE properties of a rhombus:

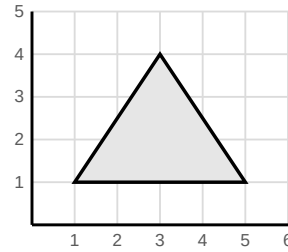
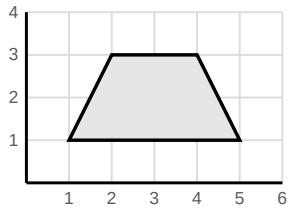


→ 1) _____

→ 2) _____

→ 3) _____

Q0B. Name the shape. (2 points) Circle the BEST name for each shape.



i) Shape on the LEFT: (A) rhombus (B) trapezoid (C) rectangle (D) parallelogram

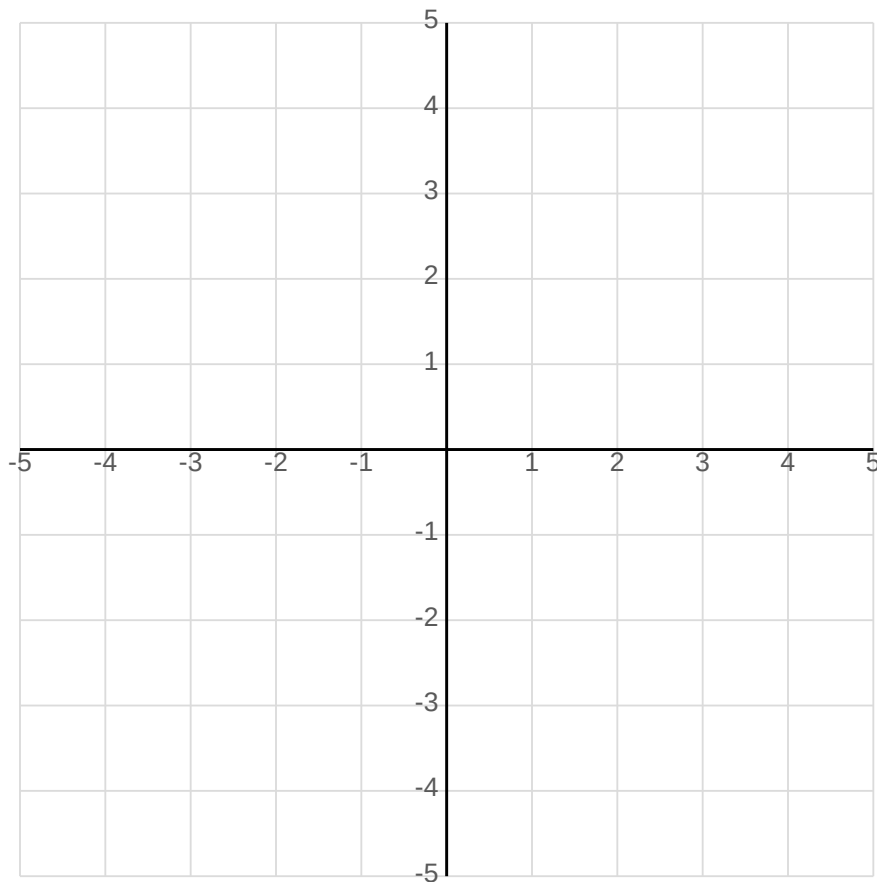
→ **Answer i):** _____

ii) Shape on the RIGHT: (A) right-angle triangle (B) equilateral triangle (C) isosceles triangle (D) trapezoid

→ **Answer ii):** _____

Q1. Plot the points. (3 points) Mark each point on the plane and write its letter next to it. One point lives in each quadrant:

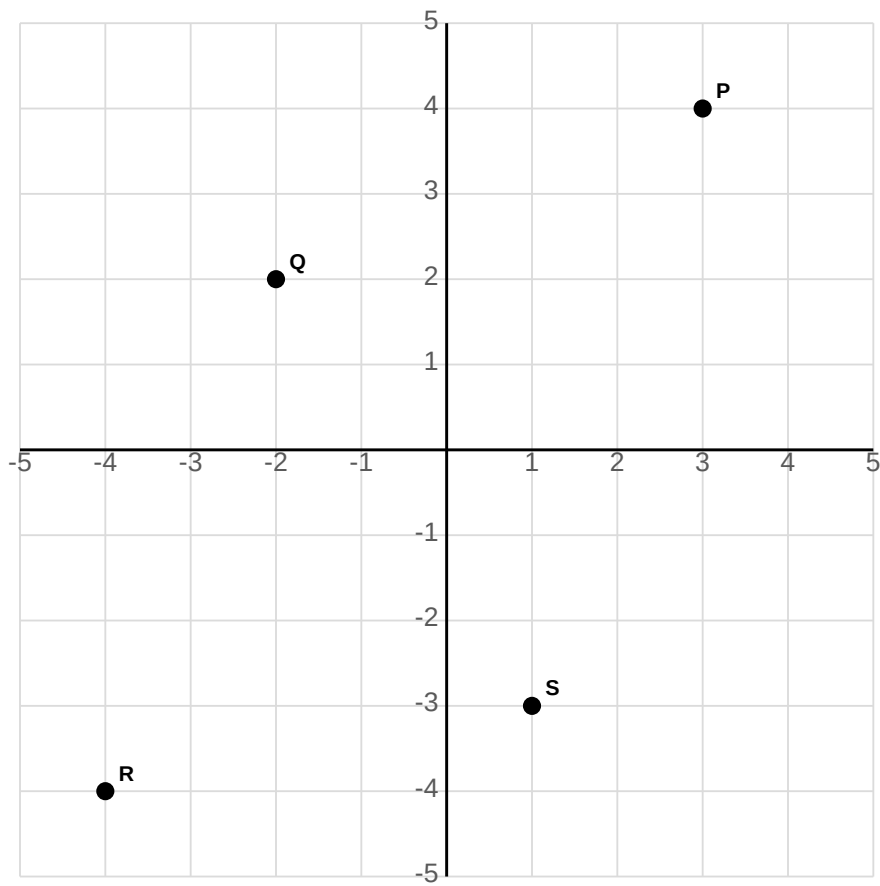
A(2, 3) B(-4, 1) C(-2, -3) D(4, -2)



Remember: x first (right if +, left if -). y second (up if +, down if -).

→ **Answer:** the 4 points you mark on the plane.

Q2. Fill the table. (3 points) Four points are marked on the plane. Write the x and y of each one in the table.

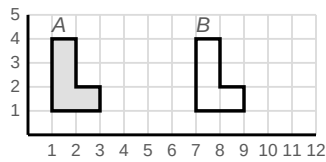


point	x	y
P		
Q		
R		
S		

→ **Answer:** the numbers you write in the table.

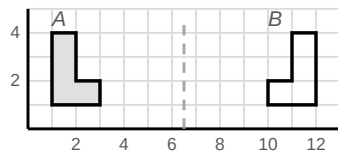
Q3. Movement. (6 points) For each pair, circle the movement: translation (slide) · reflection (flip) · rotation (turn) — and write one sentence: how do you know?

a)



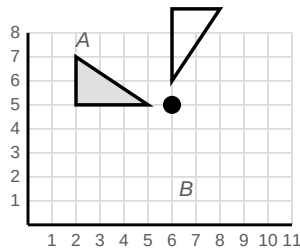
→ **Answer:** _____ (name of the movement)

b) The dashed line is a mirror.



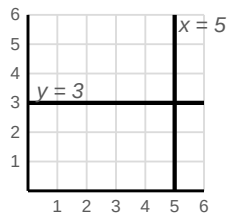
→ **Answer:** _____ (name of the movement)

c) Around the marked point.



→ **Answer:** _____ (name of the movement)

Q4D. Special lines. (2 points) Look at the two lines on the grid.



i) The HORIZONTAL line ($y = 3$): its slope is — circle one:

(A) 0 (B) 1 (C) undefined

→ **Answer i):** _____

ii) The VERTICAL line ($x = 5$): its slope is — circle one:

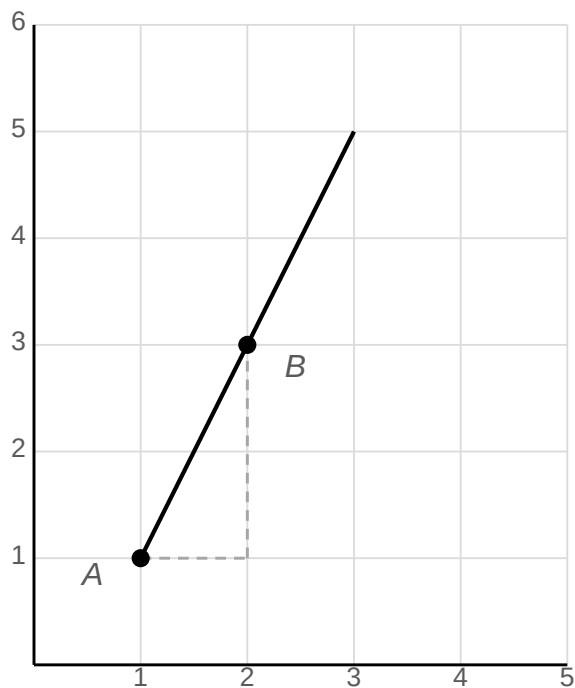
(A) 0 (B) undefined (C) 1

→ **Answer ii):** _____

Q4. Slope two ways. (4 points)

a) **Count the units.** Walk from A to B: right ____, up ____.

→ **Answer:** slope = rise/run = _____



b) **Use the formula.** First point A (2, 3), second point B (5, 9). Fill the big fraction:

$$\text{slope} = \frac{\begin{array}{c} \text{y of B} \\ \boxed{} \end{array} - \begin{array}{c} \text{y of A} \\ \boxed{} \end{array}}{\begin{array}{c} \boxed{} \\ \text{x of B} \end{array} - \begin{array}{c} \boxed{} \\ \text{x of A} \end{array}} = \boxed{}$$

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Q4B. Parallel lines (train tracks). (3 points)

i) Line a is parallel to line b. Their slopes must be — circle one:

(A) equal (B) opposite (C) negative reciprocals

→ **Answer i):** _____

ii) Line a has slope 5. Line b is parallel to line a. What is the slope of line b?

→ **Answer ii):** _____

Q4C. Perpendicular lines (crossing at 90°). (3 points)

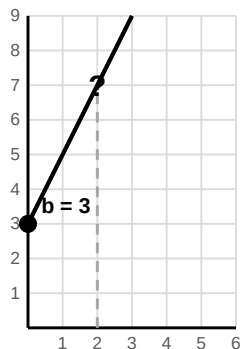
i) True or False: a line PERPENDICULAR to slope $2/3$ has slope $-3/2$. True / False

→ **Answer i):** True / False

ii) Line a has slope $3/4$. Line b is PERPENDICULAR to line a. What is the slope of line b?

→ **Answer ii):** _____

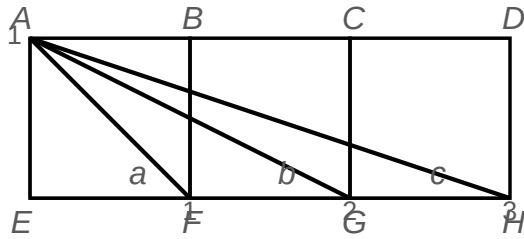
Q4E. The line formula: $y = mx + b$. (2 points) b is where the line CROSSES the y-axis. m is the slope. This line is $y = 2x + 3$: slope $m = 2$, and it crosses at $b = 3$.



The point (2, y) is on the line, but its y is missing (the ? on the grid). Use the formula to find y:

$$y = \overset{\text{m (slope)}}{\boxed{}} \times \overset{x}{\boxed{}} + \overset{\text{b (crossing)}}{\boxed{}} = \boxed{} \leftarrow \text{Answer}$$

Q5. Three squares, three segments. (3 points) Three adjacent and congruent squares, like in class. From corner A, three segments go to F, G, and H. They make $\angle a$, $\angle b$, and $\angle c$.

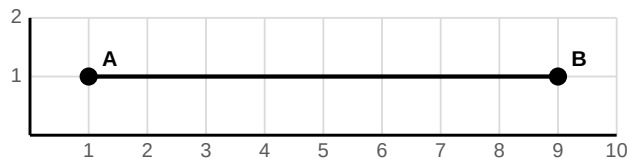


Jayda's conjecture says $\angle a + \angle b + \angle c = 90^\circ$. If we draw the SAME picture with BIGGER squares, the sum will be — circle one:

(A) still exactly 90° (B) bigger than 90° (C) smaller than 90°

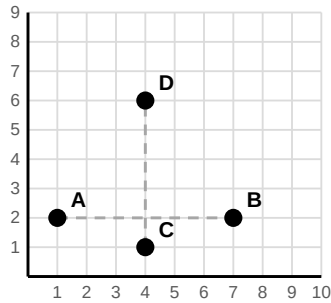
→ **Answer (letter):** _____

Q6. Cut it in half (perpendicular bisector). (2 points) Use your COMPASS: open it MORE than half of AB. Draw an arc from A, then the same arc from B. Connect the two crossing points with your straightedge. Work in the big space around the segment.



→ **Answer:** Your line cuts AB into _____ equal segments, and it crosses AB at an angle of _____ degrees.

Q7. Flat and tall distance — with the formula. (3 points)



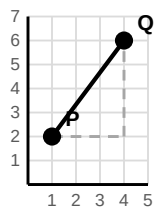
a) A(1, 2) to B(7, 2) is HORIZONTAL: use $|x_2 - x_1|$

a) distance = $\left| \boxed{} - \boxed{} \right| = \boxed{}$ ← Answer

b) C(4, 1) to D(4, 6) is VERTICAL: use $|y_2 - y_1|$

b) distance = $\left| \boxed{} - \boxed{} \right| = \boxed{}$ ← Answer

Q8. Distance between two points — the full formula. (3 points) P(1, 2) and Q(4, 6). The dashed legs make a right triangle.

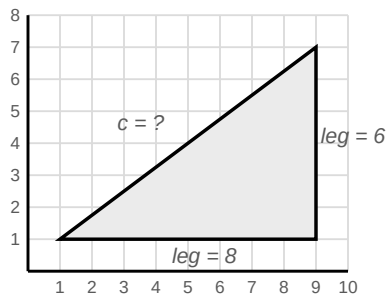


The formula, like in the book: $d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$ — fill the boxes:

$d = \sqrt{(\boxed{} - \boxed{})^2 + (\boxed{} - \boxed{})^2}$

$d = \sqrt{\boxed{} + \boxed{}} = \boxed{}$ ← Answer

Q9. The ladder rule (Pythagorean Theorem). (3 points) A right triangle has legs 6 and 8. Find the long side c .



a) Fill in the rule: $\underline{\hspace{1cm}}^2 + \underline{\hspace{1cm}}^2 = c^2$

b) $\underline{\hspace{1cm}} + \underline{\hspace{1cm}} = c^2$

c) $c^2 = \underline{\hspace{2cm}}$

→ **Answer:** $c = \underline{\hspace{2cm}}$

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