Lesson Maker Pro

Quadrilateral Evidence Lab

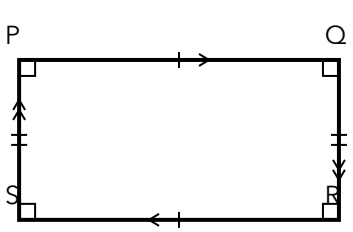
Classify, compare and mark actual figures using their properties.

4.MG.5.e Denote properties of quadrilaterals and identify parallel sides, congruent sides, and right angles by using geometric markings.

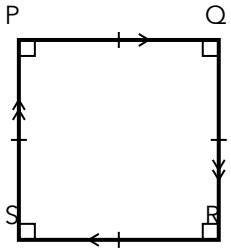
NAME _____ **DATE** _____

Read the figures

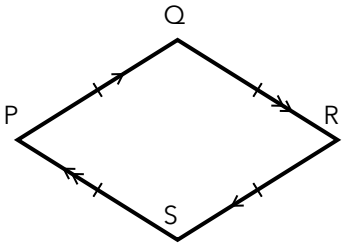
Read the markings and the given properties, not page orientation. A,B have four right angles; B,C have four congruent sides; A–D have two pairs of parallel opposite sides; E has exactly one pair. Matching ticks show congruent sides; arrow marks show parallel sides; small squares show right angles. Here a trapezoid has exactly one pair of parallel sides.



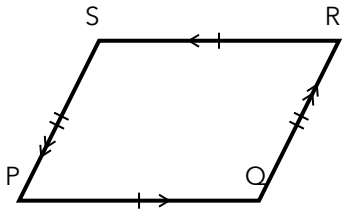
A



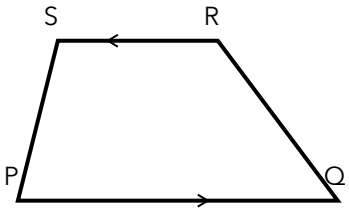
B



C



D



E

For figure A, use segment names to identify matching tick pairs, both parallel pairs, and all marked right angles. What does each kind of mark tell you? Why does an absent mark not prove a property is false?

Explain and construct

Draw and label a nonsquare rectangle WXYZ. Mark both parallel-side pairs with distinct arrow styles, both congruent-side pairs with distinct tick styles, and all right angles with small squares. Explain each mark using segment or angle names.

Draw a rhombus that is not a square. Explain why it is a parallelogram but not a rectangle.

Teacher Key

A:quadrilateral,parallelogram,rectangle. B:quadrilateral,parallelogram,rectangle,rhombus,square. C:quadrilateral,parallelogram,rhombus. D:quadrilateral,parallelogram. E:quadrilateral,trapezoid under the stated exclusive convention. Shape names are inclusive within the parallelogram family.

Diagonal table A:congruent yes,perpendicular no,bisect yes. B:yes,yes,yes. C:no,yes,yes. D:no,no,yes. Every parallelogram's diagonals bisect each other; rectangles have congruent diagonals, rhombi perpendicular diagonals; squares satisfy both. A particular drawing alone is not proof for every family member.

Figure A vertices P,Q,R,S; sides PQ,QR,RS,SP. ∠PQR and ∠QRS are examples of angle names. PQ/QR meet perpendicularly at Q. Tick pairs PQ=RS and QR=SP; parallel pairs PQ∥RS and QR∥SP; all four corners are right. A missing mark alone does not establish a false property.

Organizer: square is the rectangle/rhombus overlap; B there,A rectangle-only,C rhombus-only,D in parallelograms outside both,E in quadrilaterals outside parallelograms. Check new drawings, labels and marks. A vertex is a point where sides meet; a segment has two endpoints; an angle is formed by two rays sharing a vertex.

Virginia convention source: VDOE Properties of Quadrilaterals instructional plans, https://www.doe.virginia.gov/home/showpublisheddocument/16276/638036740201330000 .