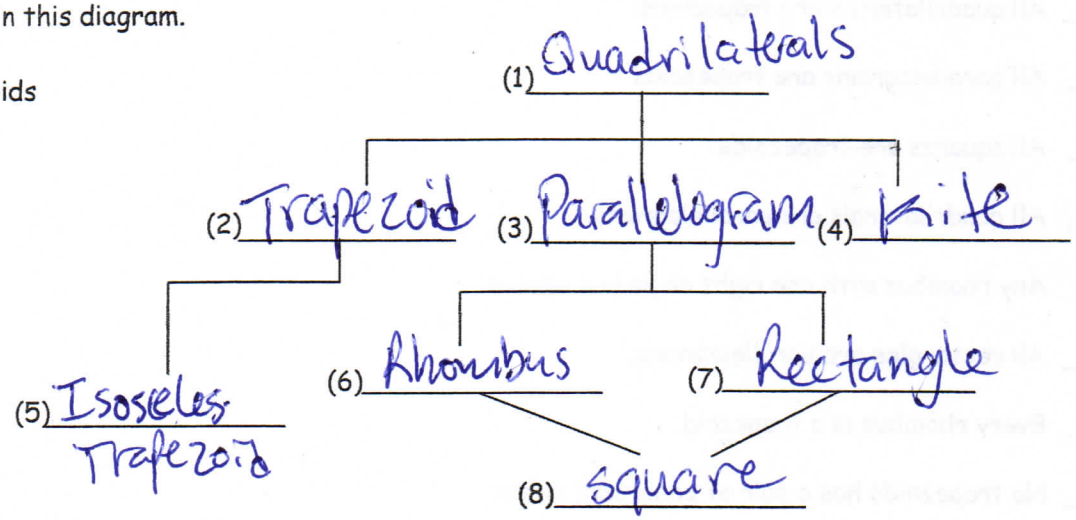
QUADRILATERAL RELATIONSHIPS

Use these words in this diagram.

Isosceles trapezoids
Kites
Parallelograms
Quadrilaterals
Rectangles
Rhombuses
Squares
Trapezoids



Tell whether the statement is true *always*, *sometimes*, or *never*. If your answer is *sometimes* or *never*, provide a sketch of a situation in which the statement is *not* true.

9. Always Each diagonal of a square divides the square into two isosceles triangles.

10. Sometimes Each diagonal of a rectangle divides the rectangle into two isosceles triangles.

11. sometimes If two congruent isosceles triangles have a common side, then their other sides from a rhombus.

12. Always If two congruent equilateral triangles have a common side, then their other sides form a rhombus.

13. Always Each diagonal of a rhombus divides the rhombus into two isosceles triangles.

14. Always If two right triangles have a common hypotenuse, then their legs form a rectangle.

15. Always If the diagonals of a quadrilateral are congruent, then the quadrilateral is a rectangle.

16. Sometimes If the diagonals of a quadrilateral are perpendicular, then the quadrilateral is a rhombus.

17. Always If each diagonal of a quadrilateral bisects a pair of opposite angles, then the quadrilateral is a rhombus.

Answer true or false.

18. T All squares are rhombi.

19. F All rhombi are squares.

20. T All squares are rectangles.

21. F All rectangles are squares.

22. T Some rectangles are squares.

23. F All trapezoids are parallelograms.

24. F All quadrilaterals are trapezoids.

25. F All parallelograms are trapezoids.

26. F All squares are trapezoids.

27. F All quadrilaterals are parallelograms.

28. T Any rhombus with one right angle is a square.

29. T All rectangles are parallelograms.

30. F Every rhombus is a trapezoid.

31. F No trapezoids has a pair of congruent sides.

32. F A parallelogram with four right angles is a square.

33. T A parallelogram with adjacent sides of equal measure is called a rhombus.

34. F Opposite sides of all quadrilaterals are equal in length.

35. T Every parallelogram is a quadrilateral.

36. T Some parallelograms are not squares.

37. F Every square is a trapezoid.

38. T Some quadrilaterals are neither trapezoids nor parallelograms.

39. T No trapezoids are rectangles.

40. T Some rectangles are rhombuses.