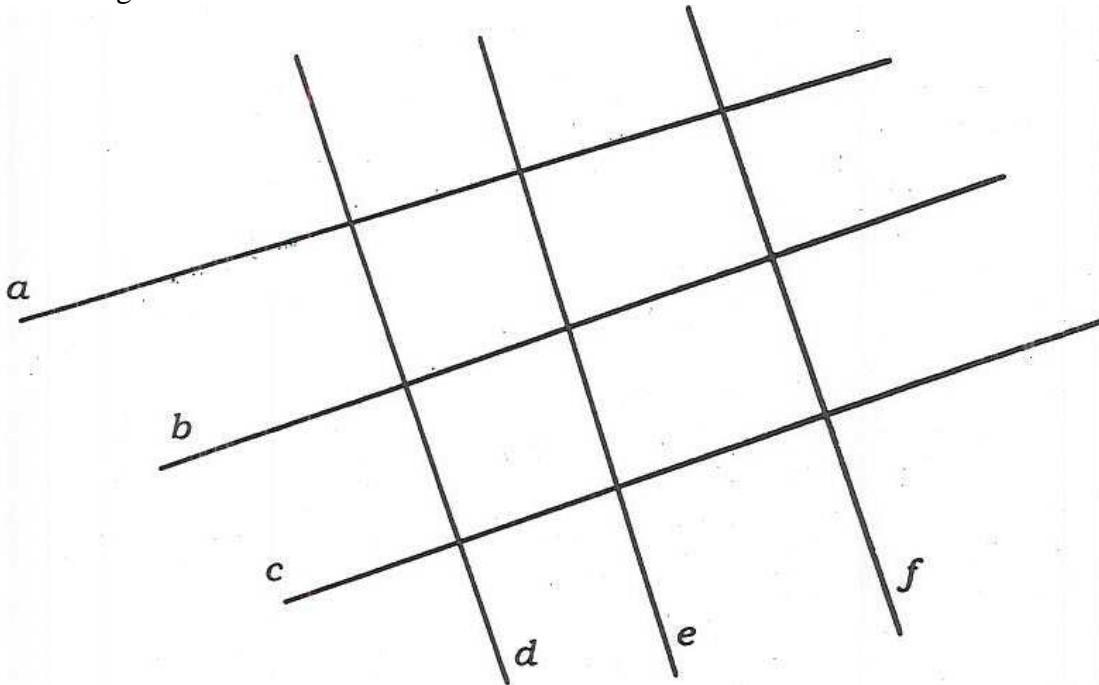


Quadrilaterals and Triangles (Section 11.2)

Paper Folding



Parallel Lines

Given two lines l and m , fold on any fold line so that l folds onto itself. Does line m also fold onto itself? If so, lines l and m are parallel. Trace the lines given above and use this test to determine which pairs of lines are parallel.

Perpendicular Lines

Let P be the intersection of lines l and m . Fold the paper at point P using line l as the fold line. Does line m fold onto itself? If so, lines l and m are perpendicular. Use this to determine which of the lines above are perpendicular.

Verifying Characteristics of Quadrilaterals

1. A **quadrilateral** is a closed figure composed of four line segments (sides). Identify the quadrilaterals on the materials card.

2. A quadrilateral with *exactly one pair* of parallel sides is a **trapezoid**. Use the paper folding technique to identify the trapezoids on the materials card.

Note: This is not the definition given in our book, but this definition is more consistent with elementary texts.

3. A quadrilateral with both pairs of opposite sides parallel is a **parallelogram**. Use the paper folding technique to identify the parallelograms on the materials card.

4. An **isosceles trapezoid** is a trapezoid in which the non-parallel sides have the same length. Identify the isosceles trapezoids on the materials card.

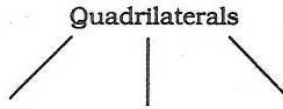
5. A **rectangle** is a quadrilateral with four right angles. Identify the rectangles on the materials card.

6. A **rhombus** is a quadrilateral with four sides the same length. Identify the rhombuses on the materials card.

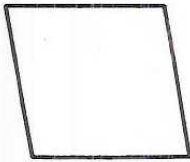
7. A **square** is a quadrilateral with four sides that are the same length and four right angles. Identify the squares on the materials card.

8. A **kite** is a quadrilateral with 2 non-overlapping pairs of adjacent sides the same length. Identify the kites on the materials card.

Construct a diagram showing the relationships among the quadrilaterals we have explored. Begin with the quadrilaterals. Use line segments to connect two figures if the set below is a subset of the set above. **Note:** You will not get the same diagram as the one in the book.



Use what you have learned about quadrilaterals to name the following polygon as many ways as possible.



Use what you have learned about quadrilaterals to name the following polygon as many ways as possible.



True/False Decide whether the following statement is true or false. Explain.

1. Every square is a rectangle.

2. Every rectangle is a square.

Triangles (3-sided Polygons)

Classifying by Sides

Equilateral

Isosceles

Scalene

Classifying by Angles

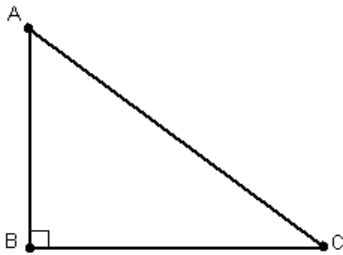
Right

Obtuse

Acute

Can you create an obtuse equilateral triangle?

Name the following triangle as specifically as possible.



Homework: Page 705: 1, 4, 5, 6, 7

MATERIALS CARD 12.3

