

New Postulates and Theorems

- If two are cut by a transversal and corresponding angles are congruent, then the lines are parallel (Postulate 11)
- Theorem 16 – If two lines are cut by a transversal and alternate interior angle are congruent, then the lines are parallel.
- Theorem 17 – If two lines are cut by a transversal and same-side interior angles are supplementary, then the lines are parallel.
- Theorem 18 – In a plane, two lines perpendicular to the same line are parallel.
- Theorem 19 – Through a point outside a line, there is exactly one line parallel to the given line.
- Theorem 20 – Through a point outside a line, there is exactly one line perpendicular to the given line.
- Theorem 21 – Two lines parallel to a third line are parallel to each other.

Exercises:

p.87 #1-25odd, 27-31

Problems:

(Your goal for these problems is not simply to solve, but rather to write an elegant solution to justify your result. It should be written well enough so that it can be shown to your peers and they can reason through your process without the need for you to add comment)

13-1 Painting My House

There are 1000 boards in the white fence around Mr. O's house. Katherine paints every second board red. Benjamin then comes along (starting in the same corner and after the paint has dried) and paints every third board blue. Lastly, Caroline follows and paints every fifth board yellow. How many boards of each color are there in the end?