

**Homework 1****Due date:** Wednesday, 1-23-08**Weight:** 10 points.**Name:****Grade:**

Please read pages 571-575. Memorize the definitions of the bold vocabulary words first, because it will help you understand the rest of the text.

- (1) If four points happen to all lie on the same line, they are called .
  
- (2) What's the difference between a line and a line segment?
  
- (3) What's the difference between a line (in the technical sense), and something commonly called a line, such as a pencil, rope, ray of sunlight, etc.? That is, in what ways is the mathematical notion of *line* idealized?
  
- (4) Can two points be noncollinear?
  
- (5) Illustrate: Two lines that do not intersect, and are not parallel. Hint: Draw a box in the standard way, then identify two of the line segments along the box.
  
- (6) Complete these sentences, thinking in terms of 3D geometry.
  - (a) Through any two points, there is a .
  - (b) Through any three points, there is a .
  - (c) Through any point and any line, there is a .
  - (d) The intersection of a line and a plane is usually a .
  - (e) The intersection of two planes is usually a .