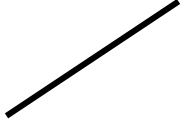
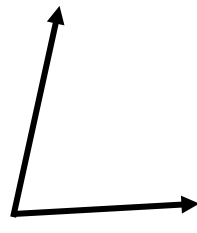

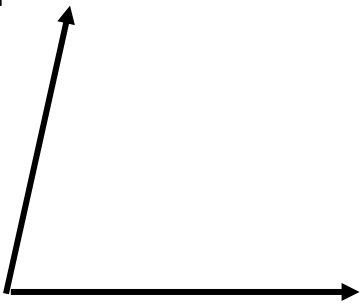


### Ch. 3 - Parallel & Perpendicular Constructions Notes

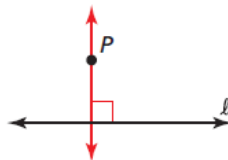
Review of previous constructions:

Copying a segment 	Copying angle 
Perpendicular bisector of a SEGMENT 	Angle Bisector 

Now, let's do three new constructions:

#### 3.2 Perpendicular Postulate

If there is a line and a point not on the line, then there is exactly one line perpendicular to the given line.



There is exactly one line through  $P$  perpendicular to  $l$ .

**Construction #1** – Perpendicular from a line through a point (NOTE – GIVEN POINT IS **NOT ON** THE LINE)

Given line  $l$  and a point  $P$  **NOT ON** line  $l$ , construct line  $m$  perpendicular to  $l$  through  $P$

•P



**Construction #2** – Perpendicular at a point ON a line (NOTE – GIVEN POINT IS **ON** THE LINE)

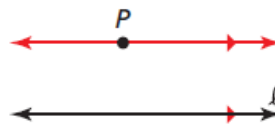
Given line  $n$  and a point R **ON** line  $n$ , construct line  $t$  perpendicular to  $n$  through R



Now let's move on to a construction involving parallel lines.

### 3.1 Parallel Postulate

If there is a line and a point not on the line, then there is exactly one line through the point parallel to the given line.



There is exactly one line through  $P$  parallel to  $l$ .

**Construction #3** – Parallel line through a point (angle copy method)

Given line  $u$  and a point Q not on line  $u$ , construct line  $w$  parallel to  $u$  through Q

