Def. Postulate

A geometric statement that is assumed to be true.

Post. 2.1

Through any 2 pts., there is exactly 1 line.

Post. 2.2

Through any 3 noncollinear pts., there is exactly 1 plane.

Post. 2.3

A line contains at least 2 pts.

Post. 2.4

A plane contains at least 3 noncollinear pts.

Post. 2.5

If 2 pts. lie in a plane, then the entire line containing those 2 pts. also lies in that plane.

Post. 2.6

If 2 lines intersect, then their intersection is exactly 1 point.

Post. 2.7

If 2 planes intersect, then their intersection is a line.

Use postulates to determine whether each statement is *always*, *sometimes*, or *never* true.

1. A line contains exactly one point.

2. Noncollinear points R, S, and T are contained in exactly one plane.

3. Any two lines ℓ and m intersect.

4. If points G and H are contained in plane $\mathcal{M}$, then $\overline{GH}$ is perpendicular to plane $\mathcal{M}$.

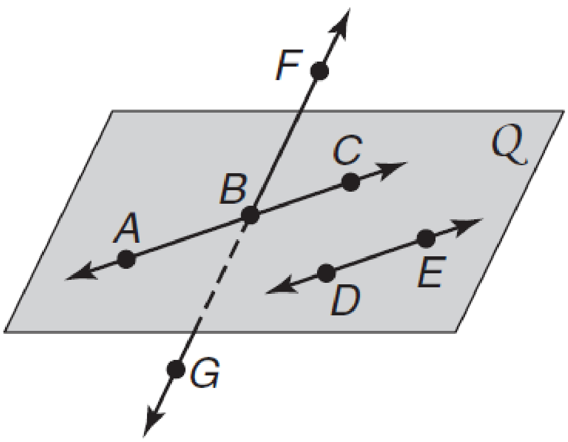
5. Planes $\mathcal{R}$ and $\mathcal{S}$ intersect in point T.

6. If points A, B, and C are noncollinear, then segments $\overline{AB}$, $\overline{BC}$, and $\overline{CA}$ are contained in exactly one plane.

In the figure, $\overline{AC}$ and $\overline{DE}$ are in plane Q and $\overline{AC} \parallel \overline{DE}$. State the postulate that can be used to show each statement is true.

7. Exactly one plane contains points F, B, and E.

8. $\overleftrightarrow{BE}$ lies in plane Q.



5 Essential parts of a good proof:

1) State the theorem or conjecture to be proven.

2) List the given information.

3) If possible, draw a diagram to illustrate the given information.

4) State what is to be proved.

5) Develop a system of deductive reasoning - do the proof.

Def. Theorem

A geometric statement that must be proven.

Th. 2.1 The Midpt. Theorem

If M if the midpt. of $\overline{AB}$, then $\overline{AM} \cong \overline{MB}$