Locus Construction (I)

1) In the applet below, plot a point *C* that lies on line *d*.

2) Construct $\overline{CF}$.

3) Construct the perpendicular bisector of $\overline{CF}$.

4) Construct a line through *C* that's perpendicular to *d*.

5) Construct the point of intersection of the lines you've constructed in (3) & (4) above.

6) Right click on this point you've constructed in (5). Select **Trace On**.

7) Now, select the **Move** arrow and drag point *C* along line *D*. What do the traces of *D* look like? Explain.

8) Clear your trace now. Measure and display the distances *FD* and *DC*. What do you notice?

9) Once again, drag point *C* along line *d.* What do you notice about *FD* and *DC*?

10) What previous theorem justifies the phenomena you've observed in (9) to be true? (Don't just "name it". *Write it out in words!*)

11) How would you define the pink locus (set of points that meet a certain condition) in the applet below? That is, how can you *geometrically* define the term you wrote as a response to (7) above?