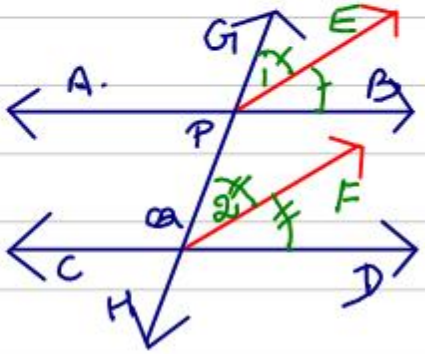
ncert exemplar, ex 6.4, Page 2

(3) given - Infig $AB \parallel CD$

to prove $PE \parallel QF$



proof $AB \parallel CD$

$\angle GPB = \angle PQD$

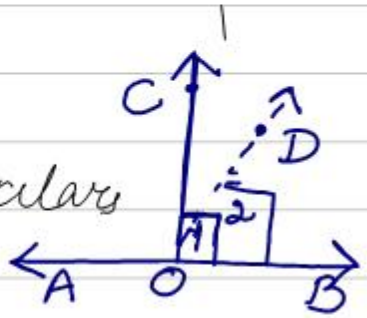
$2\angle 1 = 2\angle 2$ [PE bisects $\angle GPB$, QF bisects $\angle PQD$]

$\Rightarrow \angle 1 = \angle 2$

But these are alternate in. $\angle$s

$\therefore PE \parallel QF$

(4) given $OC \perp AB$



Proof Suppose AB has perpendicular other than OC at O

let $OD \perp AB$

$\angle 1 = 90^\circ$ ($OC \perp AB$)

$\angle 2 = 90^\circ$ ($OD \perp AB$)

$\therefore \angle 1 = \angle 2$

but this is not possible

$\because \angle 2$ is a part of $\angle 1$

$\therefore$ our Supp. is wrong and one and only one ⊥ar can be drawn to a line at a point.