For any
$$e \neq e^*$$
,

$$\frac{10}{3} - \frac{e^*}{2} \ge 2 - \frac{e}{2}.$$

This is iff

Thus, for the paging PBE to exist it must be the case that
$$a^* < 8$$

be the case that $e^* \leq \frac{8}{3}$.

LOW-type Incentive-Compatibility Condition is:

For any
$$e \neq e^*$$
,

$$\frac{10}{3} - \frac{e^*}{1} \ge 2 - \frac{e}{1}$$
.