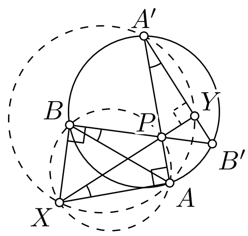
Extended hint for 9.17. One needs to show that $(A'B') \nparallel (XP)$; otherwise, the first line in the proof does not make sense. By the transversal property, this means that

$$(*) \qquad 2 \cdot \measuredangle XPA' + 2 \cdot \measuredangle PA'B' \not\equiv 0.$$

This should be done later in the proof, right before we use point Y.

Instead of $2 \cdot \measuredangle AXY \equiv 2 \cdot \measuredangle AA'Y$, we should write

$$(**) \qquad 2 \cdot \measuredangle AXP \equiv 2 \cdot \measuredangle PA'B'.$$



Since $\triangle XAP$ has a right angle at A, we have

$$\measuredangle AXP + \measuredangle XPA \equiv \pm\tfrac{\pi}{2}.$$

Since $2 \cdot \measuredangle XPA' \equiv 2 \cdot \measuredangle XPA$, $(**)$ implies that

$$2 \cdot \measuredangle XPA' + 2 \cdot \measuredangle PA'B' \equiv \pi,$$

and $(*)$ follows.

Additionally, we implicitly use the following identities:

$$2 \cdot \measuredangle AXP \equiv 2 \cdot \measuredangle AXY,$$
$$2 \cdot \measuredangle ABP \equiv 2 \cdot \measuredangle ABB',$$
$$2 \cdot \measuredangle AA'B' \equiv 2 \cdot \measuredangle AA'Y.$$