$$t_{pd\_sy} = t_{pINV} + t_{pAND3} + t_{pOR4}$$
$$= 30 \text{ ps} + 80 \text{ ps} + 90 \text{ ps}$$
$$= \textbf{200 ps}$$

$$t_{pd\_dy} = t_{pAND3} + t_{pOR4}$$
$$= \textbf{170 ps}$$

(a)
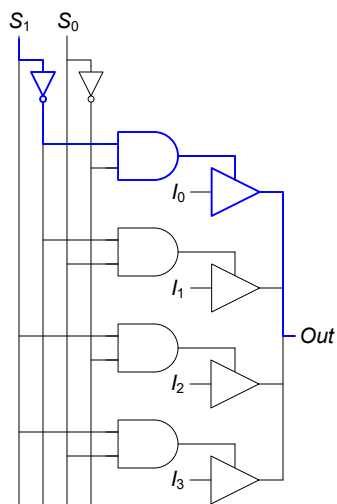
$$t_{pd\_sy} = t_{pINV} + t_{pAND2} + t_{pTRI\_SY}$$
$$= 30 \text{ ps} + 60 \text{ ps} + 35 \text{ ps}$$
$$= \textbf{125 ps}$$

$$t_{pd\_dy} = t_{pTRI\_AY}$$
$$= \textbf{50 ps}$$

(b)