Let $G = (V, E, F)$ be a connected loopless and bridgeless plane graph, with vertex set $V$, edge set $E$, and face set $F$. Let $X \in \{V, E, F, V \cup E, V \cup F, E \cup F, V \cup E \cup F\}$: Two elements $x$ and $y$ of $X$ are *facially adjacent* in $G$ if they are incident, or they are adjacent vertices, or adjacent faces, or facially adjacent edges (i.e. edges that are consecutive on the boundary walk of a face of $G$). A $k$-colouring is facial with respect to $X$ if there is a $k$-colouring of elements of $X$ such that facially adjacent elements of $X$ receive different colours. It is known that:

- $G$ has a facial 4-colouring with respect to $X \in \{V, F\}$. The bound 4 is tight. (The Four Colour Theorem, Appel and Haken 1976, see [1]).
- $G$ has a facial 6-colouring with respect to $X = V \cup F$. The bound 6 is tight. (The Six Colour Theorem, Borodin 1984, see [2]).

We prove that:

- $G$ has a facial 4-colouring with respect to $X = E$. The bound 4 is tight.
- $G$ has a facial 6-colouring with respect to $X \in \{V \cup E, E \cup F\}$. There are graphs required 5 colours in such a colouring.
- $G$ has a facial 8-colouring with respect to $X = V \cup E \cup F$. There is a graph requiring 7 colours in such a colouring.

**Keywords:** facial colouring, entire colouring, total colouring.

**AMS Subject Classification:** 05C10, 05C15.

**References**
