Six changes to a circular loop with a steady current. Consider a circular copper loop carrying a steady current, in air, and the following changes to the loop, one at the time: (a) change the wire material from copper to aluminum, (b) double the loop radius, (c) extend the loop so it becomes an ellipse with the major to minor axis ratio of four but the same circumference, (d) add a ferromagnetic core so that the loop encircles it, (e) double the current of the loop, and (f) reverse the direction of the loop current. Which of these changes would result in a change of the loop inductance?

(A) Changes (a) – (d) only.
(B) Changes (b) – (f) only.
(C) Changes (b) – (d) only.
(D) Changes (a) and (d) only.
(E) Changes (b) – (d) and (f) only.
(F) All changes, (a) – (f).

Solution: (C)
Answer: (C)