

# **$P$ -Colorability of the Knot/Link $(12)^n$ and $(1\bar{2})^n$**

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## **Abstract**

The respective ends of the 3-strand braids  $(12)^n$  and  $(1\bar{2})^n$  may be joined to form knots or links. We prove

1.  $(12)^n$  is  $p$ -colorable if, and only if,  $n$  is even and  $p = 3$ .
2.  $(1\bar{2})^n$  is  $p$ -colorable if, and only if,
  - (a)  $n$  is even and  $p=5$  or  $p$  is an odd prime that divides the  $n$ th Fibonacci number  $F_n$  or
  - (b)  $n$  is odd and  $p$  is an odd prime that divides the  $n$ th Lucas number  $L_n$ .