

2023 π puzzle

Use the digits 2, 0, 2, 3 exactly once (in order) to get as close as possible to π . You may use, together with brackets:

- Standard operations: $+$, $-$, \times , \div
- Negation: $-\square$
- Exponentiation of two numbers: \square^\square
- Square root of a number: $\sqrt{\square}$
- n th root of a number: $\sqrt[n]{\square}$
- Factorial: $\square!$ (Note: you may use iterated factorial but not multi-factorial, so that $3!! = (3!)! = 6! = 720$, and **not** $3!! = 3 \times 1 = 3$.)
- Digit decimal: $.d$ (with an original digit; you cannot do $.4! = .24$)
- Digit repeating decimal: $.\overline{d}$
- Percent: $\square\%$