Fortunate Numbers • Mark Senn • last updated on 2022-03-11 at 17:05-05

Problem Statement

I changed the math in a roman font to be in a math italic font.

From The Weekly Challenge - 155 Task #1: Fortunate Numbers retrieved on 2022-03-11 at 17:05-05:31-05:

> **Submitted by:** Mohammad S Anwar
>
> Write a script to produce first **8 Fortunate Numbers** (unique and sorted).
>
> According Wikipedia
>
> > A Fortunate number, named after Reo Fortune, is the smallest integer $m > 1$ such that, for a given positive integer n, $p_n\# + m$ is a prime number, where the primorial $p_n\#$ is the product of the first n prime numbers.
>
> **Expected Output**
>
> 3, 5, 7, 13, 17, 19, 23, 37

Raku Solution

```
# Use Raku version 6.d.
use v6.d;

# Print the first 8 unique and sorted Fortunate Numbers.
my $n = 8;

# Guess that first 50 primes and primorials will give
# the first 8 unique and sorted Fortunate Numbers.
my $nn = 50;

# Get the first nn primes.
my @prime = (2..*).grep(&is-prime).head($nn);

# Compute the first nn primorials.
my @primorial;
@primorial[0]= @prime[0];
for (1..^$nn)
{
    @primorial[$_] = @primorial[$_-1] * @prime[$_];
}

# Save the first $nn m's.
my @m = ();
# Loop through the first nn primorials.
for (0..^$nn) -> $i
{
    # For each primorial check if it plus m is prime, for m = 2 to whatever.
    for (2..*) -> $m
    {
```

```
            (@primorial[$i] + $m).is-prime  and  @m.push($m), last;
    }
}

# Print the first 8 unique and sorted Fortunate Numbers.
@m.unique.sort.head(8).join(', ').say;
```