

Find the smallest positive integer greater than 1 which yields a remainder of 1 when divided by any single digit positive integer greater than 1.

$$2 \times 3 \times 4 \times 5 \times 6 \times 7 \times 8 \times 9 + 1$$

satisfies the property, but can we get smaller?

$$9 = (3 \times 3)$$

$$8 = (2 \times 2 \times 2)$$

(7)

6

(5)

4

3

So

$$\checkmark \quad \checkmark \quad \checkmark \quad \checkmark$$
$$2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 7$$

is the smallest

2

possible

So 2521 is the solution