Given variable $p: [n\bin] := [\bot; \bot; (n-2)\top]$, the following program is the sieve of Eratosthenes for determining if a number is prime.

```
for $i := 2; \text{ceil}(n^{1/2})$
  do if $p i$ then for $j := i; \text{ceil}(n/i)$ do $p := (j\times i) \rightarrow \bot | p$ od
  else ok fi od
```

(a) Show how the program can be transformed for concurrency. State your answer by drawing the execution pattern.

(b) What is the execution time, as a function of $n$, with maximum concurrency?