

Homework 2 Report

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1 P1

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1: function REC_PSUM( $a, x_0, b, n$ )
2:   if (n == 1) then
3:      $s(0) = x_0$ ; return; end;
4:   end if
5:    $x = \text{zeros}(n/2, 1)$ ;
6:    $a\_new = \text{zeros}(n/2 - 1, 1)$ ;
7:    $x(0) = x_0$ ;
8:   parfor  $i = 1 : n$  do
9:      $x(i) = b(i)$ ;
10:  end parfor
11:  parfor  $i = 0 : n/2 - 1$  do
12:     $y(i) = x(2 * i) * a(2 * i + 1) + x(2 * i + 1)$ ;
13:    if (i != 0) then
14:       $a\_new(i) = a(2 * i) * a(2 * i + 1)$ ;
15:    end if
16:  end parfor
17:   $c = \text{REC\_PSUM}(a\_new, y(0), y[1 : n/2 - 1], n/2)$  ;
18:   $s(0) = x_0$ ;
19:  parfor  $i = 1 : n - 1$  do
20:    if isOdd(i) then
21:       $s(i) = c(i/2)$ ;
22:    else
23:       $s(i) = c((i - 1)/2) * a(i) + x(i)$ ;
24:    end if
25:  end parfor
26: end function
```

2 P2

3 P3