/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\* You and your partner's name, if any. \*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

Li Xi

Matthew Pestona

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\* Do you attest that this work is your own, in accordance with the \*\*\*

\*\*\* statement on academic integrity in the syllabus? \*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

Yes or no?

Yes.

/\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

\*\*\* List any other comments here. \*\*\*

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*/

Task 1

Diagram

Description automatically generated

Task 2

A picture containing text

Description automatically generated

Task 3

A piece of paper with writing on it

Description automatically generated

Task 4.1

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | j | | | | | | | | |
|  |  | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| i | 1 | d1 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2 | d4 | 0 | 1 | 1 | 3 | 1 | 2 | 3 | 4 | 2 |
| 3 | d5 | 0 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |

Task 4.2

The problem identified: if continuing using the base case i = 1, then I will get j/d1 = 0.5 when j = 1 and d1 = 2. To avoid fractions, I changed the base cases to:

j/d1 if i = 1 && d1 = 1

j if i = 2 && d1 = 2

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | | j | | | | | | | | |
|  |  | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| i | 1 | d2 | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 2 | d4 | 0 | 1 | 1 | 3 | 1 | 2 | 3 | 4 | 2 |
| 3 | d5 | 0 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 2 |

Task 5

g(0) = 0; f(0) = 0;

g(2) = g(1) + f(2) = 2 \* g(1) + f(1) = 2 \* (g(0) + f(1)) + f(1) = 2 \* (g(0) + f(0) + g(0)) + f(0) + g(0) = 0;

A piece of paper with writing on it

Description automatically generated with medium confidence