Consider the computation:


Assume:

- Both operations (add and multiply) take 1 unit of time to complete
- An adder takes 1 unit of area
- A multiply takes 2 units of area

1. If you have an area budget of 7 units, what mixes of adders and multipliers are possible?

|  | Mixes |  |  |  |  |  |
| :---: | :--- | :--- | :--- | :--- | :--- | :--- |
| Add |  |  |  |  |  |  |
| Mpy |  |  |  |  |  |  |

2. What is the resource bound for each of the cases identified above?

3. Schedule each of the cases and identify the number of cycles required to compute the graph.


| ${ }_{\text {cycle }}$ |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\stackrel{1}{2}$ |  |  |  |  |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |  |  |  |  |
| $\stackrel{4}{5}$ |  |  |  |  |  |  |  |  |  |  |
| - 7 |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |
| $\begin{array}{r}9 \\ \hline 10\end{array}$ |  |  |  |  |  |  |  |  |  |  |




