

Answers

Q7-1.

No, it doesn't make sense. This particular function only requires 2 multiplies, 3 adds, and 1 store in order to be executed. Since the computational requirements are so small, chances are that the overhead requirements of the accelerator are similar. Hence, using an accelerator would probably not help performance that much or even possibly degrade performance.

Q7-2.

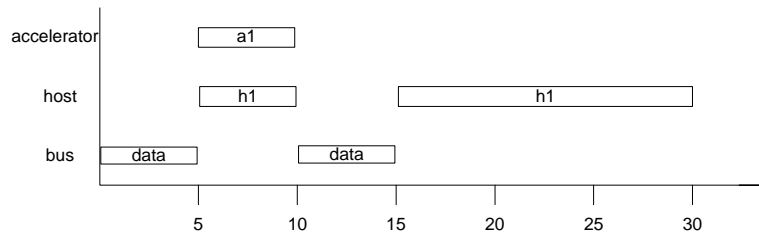
Yes, it does make sense. Because the 486 lacks floating point support and this particular function not only requires floating point support but is also computationally intensive, adding an accelerator could be justified if the function was used frequently.

Q7-3.

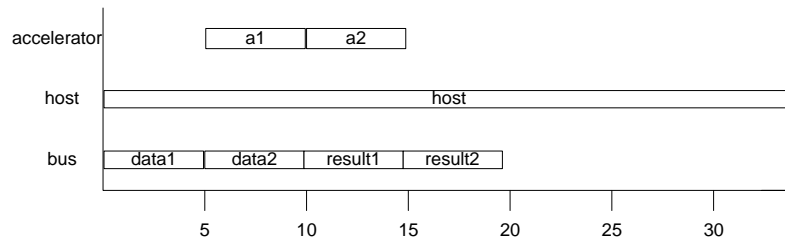
No, it does not make sense because the processor already implements a sine function called fsin that is probably just as optimized as any accelerator. Additionally, the extra overhead causes it to be particularly non-worthy.

Q7-4.

a.



b.



Q7-5.

The longest path from P1 to P5 is through P3 and P4.

Q7-6.

Assume that there are only two paths from entry to exit. Hence, a pseudocode solution could look like:

```
LeftTotal=RightTotal=value(start);
for(node=right(start); node!=endnode;node=next(node))
    RightTotal+=value(node);
for(node=left(start); node!=endnode;node=next(node))
    LeftTotal+=value(node);

if(RightTotal > LeftTotal) Print("Right path is longer");
else if(leftTotal > RightTotal) Print("Left path is longer");
else Print("Paths are equal");
```