

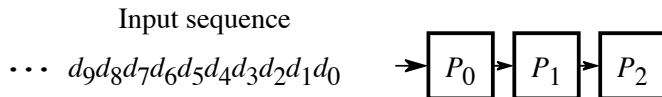
# Worksheet #24: Analyzing Parallelism in an Actor Pipeline

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Consider a three-stage pipeline of actors set up so that  $P_0.nextStage = P_1$ ,  $P_1.nextStage = P_2$ , and  $P_2.nextStage = null$ . The `process()` method for each actor is shown below. Assume that 100 non-null messages are sent to actor  $P_0$  after all three actors are started, followed by a null message. What will the total WORK and CPL be for this execution? Recall that each actor has a sequential thread.



```
1.     protected void process(final Object msg) {
2.         if (msg == null) {
3.             exit();
4.         } else {
5.             doWork(1); // unit work
6.         }
7.         if (nextStage != null) {
8.             nextStage.send(msg);
9.         }
10.    }
```

