

15 Pipelining and Flynn – Part 2 — Answers

Answers

Work through these after trying the questions yourself.

15.1 Overlaps the stages of different instructions, like an assembly line.

15.2 One.

15.3 A hazard.

15.4 One instruction working on many data items at once.

15.5 A GPU.

15.6 Each instruction still passes through all the stages, but because they overlap, a new instruction *finishes* every cycle once the pipeline is full. So more instructions complete per second, even though one instruction's own journey is unchanged.

15.7 A GPU is built for SIMD: it can apply the same instruction to many pixels at the same time. So instead of editing the pixels one after another, it handles huge groups together, finishing far sooner.