Occlusion Query

Occlusion Queries count the number of fragments drawn between the `vkCmdBeginQuery` and the `vkCmdEndQuery` that pass both the Depth and Stencil tests. This is commonly used to see what level-of-detail should be used when drawing a complicated object.

Some hints:
- Don't draw the whole scene – draw the object you are interested in.
- Don't draw the whole object – draw a simple bounding volume at least as big as the object.
- Don't draw the whole bounding volume – cull away the back faces (two reasons: time and correctness).
- Don't draw the colors – draw just the depths especially if the fragment shader is time-consuming.

```
uint32_t fragmentsDrawn = 0;
result = vkGetQueryPoolResults(LogicalDevice, occlusionQueryPool, 0, 1, sizeof(uint32_t), &fragmentsDrawn, 0, VK_QUERY_RESULT_WAIT_BIT);
```

Pipeline Statistics Query

Pipeline Statistics Queries count how many of various things get done between the `vkCmdBeginQuery` and the `vkCmdEndQuery`.

```
uint32_t counts[3];
result = vkGetQueryPoolResults(LogicalDevice, pipelineStatisticsQueryPool, 0, 3, sizeof(uint32_t), counts, 0, VK_QUERY_RESULT_WAIT_BIT);
```
Timestamp Queries count how many nanoseconds of time elapsed between the vkCmdBeginQuery and the vkCmdEndQuery.

```cpp
timestampQueryResults LogicalDevice
result = vkGetQueryPoolResults
(Nat64_t) nanosecondsCount;
result = vkGetQueryPoolResults
(VK_QUERY_RESULT_64_BIT | VK_QUERY_RESULT_WAIT_BIT);

vkCmdCopyQueryPoolResults
(VK_QUERY_RESULT_64_BIT | VK_QUERY_RESULT_WAIT_BIT);

Timestamp Query

The vkCmdWriteTimeStamp() function produces the time between when this function is called and when
the first thing reaches the specified pipeline stage.

Even though the stages are "bits", you are supposed to only specify one of them.

```