Worksheet 2B

Quiz 1: *Semantics*

What should the following evaluate to?

Program *Result*

```
(if true 22 33)
```

```
(if false 22 33)
```

```
(let (x (if false 22 99))
  (if true (add1 x) 999))
```

Quiz 2: *Assembly*

Suppose `false` is `0` and `true` is `1`. Write the assembly code for

Program *Assembly*

```
(if true 22 33)
```

```
mov rax, 1
```

```
(if false 22 33)
```

```
mov rax, 0
```

```
(if cond e1 e2)
```

```
;; strategy for `if`
```

Quiz 3: *Compiling Equality*

Suppose `false` is `0` and `true` is `1`. Write the assembly code for

Program *Assembly*

```
(= 10 20)
```

```
mov rax, 10
```

```
(= e1 e2)
```

```
;; strategy for `eq`
```

Quiz 4: *Compiler Tag Checking Strategy*

Write the asm to check if `rax`'s value has a given `<tag>`

```
_____; save rax
_____; extract LSB
_____; compare with <tag>
_____; jump to err if not-eq
```

Update `compile_expr` for `if`, `eq`, `+` to check tags for operands.

Quiz 5: *Your turn!*

What is something you found confusing in today's lecture (or earlier)?