

Testing Latexify.jl cases, and/or, negation

1. Cases

$$R(p, e, d) = \begin{cases} 0 & \text{if } e \\ \log(p) - d & \text{otherwise} \end{cases}$$

```
1 function R(p,e,d) # standard: with explicit return
2     if e
3         return 0
4     else
5         return log(p) - d
6     end
7 end
```

$$R(p, e, d) = \begin{cases} 0 & \text{if } e \\ \log(p) - d & \text{otherwise} \end{cases}$$

```
1 function R(p,e,d) # without explicit 'return'
2     if e
3         0
4     else
5         log(p) - d
6     end
7 end
```

$$R(p, e, d) = \begin{cases} 0 & \text{if } (2d \neq 10) \end{cases}$$

```
1 function R(p,e,d) # without else
2     if 2d != 10
3         0
4     end
5 end
```

$$R(p, e, d) = \begin{cases} 0 & \text{if } (\sqrt{d} < 777) \\ 999 & \text{if } e \vee \neg t \end{cases}$$

```
1 function R(p,e,d) # without else, but with elseif
2     if sqrt(d) < 777
3         0
4     elseif e || !t
5         999
6     end
7 end
```

1.1 Ternary Ifs

$$R(p, e, d) = \begin{cases} 0 & \text{if } e \\ \log(p) - d & \text{otherwise} \end{cases}$$

```
1 R(p,e,d) = e ? 0 : log(p) - d
```

$$R(p, e, d, t) = \begin{cases} 0 & \text{if } e \vee t \\ \log(p) - d & \text{otherwise} \end{cases}$$

```
1 R(p,e,d,t) = e || t ? 0 : log(p) - d
```

$$R(p, e, d, t) = \begin{cases} 0 & \text{if } t \wedge e \\ \begin{cases} -d & \text{if } t \wedge \neg e \\ \log(p) & \text{otherwise} \end{cases} & \text{otherwise} \end{cases}$$

```
1 R(p,e,d,t) = (t && e) ? 0 : ((t && !e) ? -d : log(p)) # nested (same result w/out parens)
```

$$R(p, e, d, t) = \begin{cases} 0 & \text{if } t \wedge e \\ -d & \text{if } t \wedge \neg e \\ \log(p) & \text{otherwise} \end{cases}$$

```
1 R(p,e,d,t) = if (t && e); 0 elseif (t && !e); -d else log(p) end # one-line conditional
```

1.2 Larger Cases

$$R(p, e, d, t) = \begin{cases} 0 & \text{if } t \wedge e \\ -d & \text{if } t \wedge \neg e \\ -2d & \text{if } 2t \wedge e \\ -3d & \text{if } 3t \wedge e \\ \log(p) & \text{otherwise} \end{cases}$$

```
1 function R(p,e,d,t) # lots of elseifs
2     if t && e
3         return 0
4     elseif t && !e
5         return -d
6     elseif 2t && e
7         return -2d
8     elseif 3t && e
9         return -3d
10    else
11        return log(p)
12    end
13 end
```

$$R(p, e, d, t) = \begin{cases} 0 & \text{if } t \wedge e \\ -d & \text{if } t \wedge \neg e \\ \begin{cases} -10d & \text{if } (t = 10) \\ -2d & \text{otherwise} \end{cases} & \text{if } 2t \wedge e \\ -3d & \text{if } 3t \wedge e \\ \log(p) & \text{otherwise} \end{cases}$$

```

1 function R(p,e,d,t) # lots of elseifs (with some nesting)
2     if t && e
3         return 0
4     elseif t && !e
5         return -d
6     elseif 2t && e
7         if t == 10
8             return -10d
9         else
10            return -2d
11        end
12    elseif 3t && e
13        return -3d
14    else
15        return log(p)
16    end
17 end

```

$$\text{reward}(s, a, sp, o) = \begin{cases} -1.0 & \text{if } (a = 1) \\ -100.0 & \text{if } (s = a) \\ 10.0 & \text{otherwise} \end{cases}$$

```

1 function reward(s, a, sp, o) # note \mathrm for function names longer than one character
2     if a == 1
3         return -1.0
4     elseif s == a
5         return -100.0
6     else
7         return 10.0
8     end
9 end

```