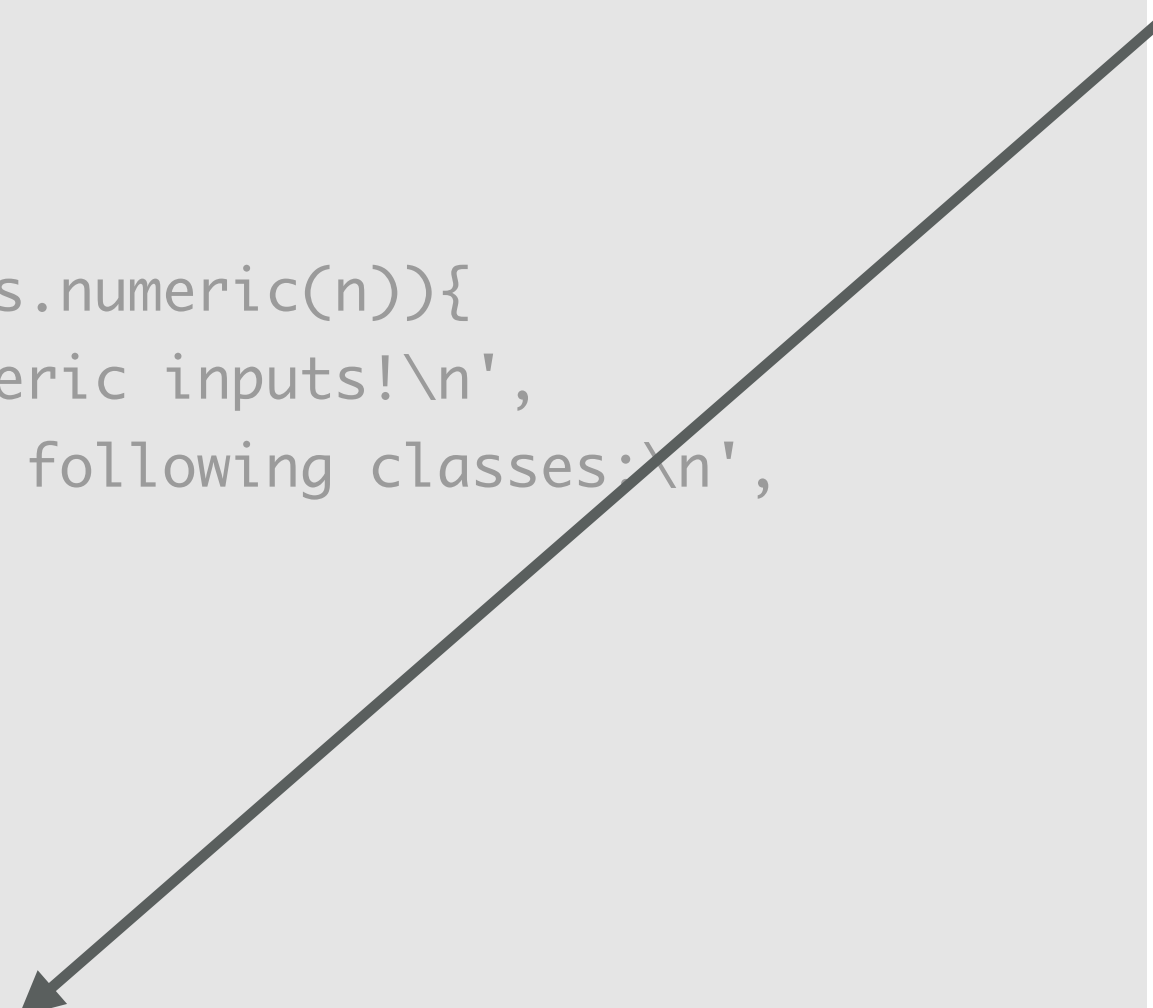


# INVALID PARAMETERS

What else can you think of? What about abnormal interest rate ranges?

```
pv <- function(FV, r, n = 5) {  
  
  if(!is.atomic(FV)) {  
    stop('FV must be an atomic vector')  
  }  
  
  if(!is.numeric(FV) | !is.numeric(r) | !is.numeric(n)){  
    stop('This function only works for numeric inputs!\n',  
        'You have provided objects of the following classes:\n',  
        'FV: ', class(FV), '\n',  
        'r: ', class(r), '\n',  
        'n: ', class(n))  
  }  
  
  if(r < 0 | r > .25) {  
    message('The input for r exceeds the normal\n',  
           'range for interest rates (0-25%)\n')  
  }  
  
  present_value <- FV / (1 + r)^n  
  round(present_value, 2)  
}
```



If we add a `message()` this allows us to:

- notify the user of something
- while still executing the code

# INVALID PARAMETERS

What else can you think of? What about abnormal interest rate ranges?

```
pv(FV = 1000, r = .28, n = 5)
```

The input for *r* exceeds the normal  
range for interest rates (0-25%)

```
[1] 1292.36
```

If we add a `message()` this  
allows us to:

- notify the user of something
- while still executing the code