Problem 1

Write a program to ask for any integer `n` as input. Then, using a combination of `if` and `case` blocks, classify the number as `positive odd`, `positive even`, `negative odd`, `negative even`, or `zero`. Print out your result. *Hint:* You may want to use the `case` block for `zero`.

Problem 2

Write a Fortran code to factorize some user-supplied value. After reading an integer, `N`, your program should be able to break `N` down into a set of prime factors which, when multiplied together, equal `N`. After execution, the program should have two types of print statements. For prime numbers, (*e.g.,* using `N=3`):

`3 is a prime number`

and (*e.g.,* using `N=120`):

`120 = 4(2) + 1(3) + 1(5)`

for non-prime numbers. The values in parentheses should be the prime factors, while the values in front are the multiples of those primes.