Problem 1

The problem with the function is two fold; one is that it simply rounds down any float with the *int* function, and the second is that for small numbers or perfect squares of primes the number which is the smallest prime factor is not included in the range. This can be fixed by adding + 1 to the range, allowing it to check the value which might be the smallest prime. The tests here include the numbers 4 and 25 for which the function was failing before.

Problem 2

The problem involved increasing coverage for problem 1. Initially we only tested for the numbers 4 and 25 which involved adjusting the range, but now tests for the number 1 and a prime number (in our case, the number 7) were also added to increase the coverage to 100%. As for the code involving months and the number of days, based on the if-else statements I tested for each possible case including the case that there is a typo and None is returned. py.test —cov shows us that both the code files have 100% coverage.

Problem 3

Problem 3 asks us to give more information about the tests, which we have done in the code. We are also asked to generate a coverage report, which we do with the py.test --cov-report html --cov command. I have taken a screenshot with the report which mentions 100% coverage for all three of the files.

Module ↓	statements	missing	excluded	coverage
test_factor.py	11	0	0	100%
test_month.py	15	0	0	100%
test_operate.py	29	0	0	100%