Weekly Assignment 6

1. Write a Python program, which reads a, b, c, p, q and r. Let ax + by + c = 0 and px + qy + r = 0 be equations of lines. Print their point of intersection. If input 4, 8, 12, 2, 7, 3 then output (-5,1).
2. Write a Python program, which reads a, b and c as sides of a triangle and prints the angle A in degree. Hint: $a^2 = b^2 + c^2 – 2bcCOS(A)$. [Hint: use acos Example: Input 13, 12, 5 output 90. input 10, 20, 17.32 output 30. input 7, 7, 7 output 60]
3. Write a Python program, which reads a, b, c, d and e and prints the distance between point (a,b) and line cx+dy+e=0. [Hint: $(ac+bd+e)/(c^2+d^2)^{1/2}$.] input 6, 7, 3, 4, 2 output 9.6.
4. Write a Python program, which reads a, b and c. Let $ax^2 + bx + c=0$ be a quadratic equation. If roots are real and distinct then both roots are printed. If roots are equal, then only one root is printed. If roots are imaginary, then real part and complex part of both roots are printed.
5. Write a Python program, which reads a, b and c. Let ax + by + c = 0 be equation of line. Print its slope. The program also prints whether the line is vertical or not.