**1.**Python Program for Finding the vertex, focus and directrix of a parabola.****

def parabola(a, b, c):

print ("Vertex: (" , (-b / (2 \* a)) , ", "

,(((4 \* a \* c) - (b \* b)) / (4 \* a)) , ")" )

print ("Focus: (" , (-b / (2 \* a)) , ", "

, (((4 \* a \* c) - (b \* b) + 1) / (4 \* a)) , ")" )

print ("Directrix: y="

, (int)(c - ((b \* b) + 1) \* 4 \* a ))

a = 5

b = 3

c = 2

parabola(a, b, c)

**OUTPUT**

