```
# Power function to return value of a^b mod P
def power(a, b, p):
  if b == 1:
    return a
  else:
    return pow(a, b) % p


def main():

  # Both persons agree upon the public keys G and P
  # A prime number P is taken
  P = 23
  print("The value of P:", P)

  # A primitive root for P, G is taken
  G = 9
  print("The value of G:", G)

  # Alice chooses the private key a
  # a is the chosen private key
  a = 4
  print("The private key a for Alice:", a)

  # Gets the generated key
  x = power(G, a, P)

  # Bob chooses the private key b
  # b is the chosen private key
  b = 3
  print("The private key b for Bob:", b)

  # Gets the generated key
  y = power(G, b, P)

  # Generating the secret key after the exchange of keys
  ka = power(y, a, P)

  kb = power(x, b, P)

  print("Secret key for the Alice is:", ka)
  print("Secret key for the Bob is:", kb)


if __name__ == '__main__':
  main()
```

```
The value of P: 23
The value of G: 9
The private key a for Alice: 4
The private key b for Bob: 3
Secret key for the Alice is: 9
Secret key for the Bob is: 9
```

Start coding or generate with AI.