שם: שחר אשר
ת.ז. 209305408

# מבוא להצפנה – תרגיל 3

.1

א.

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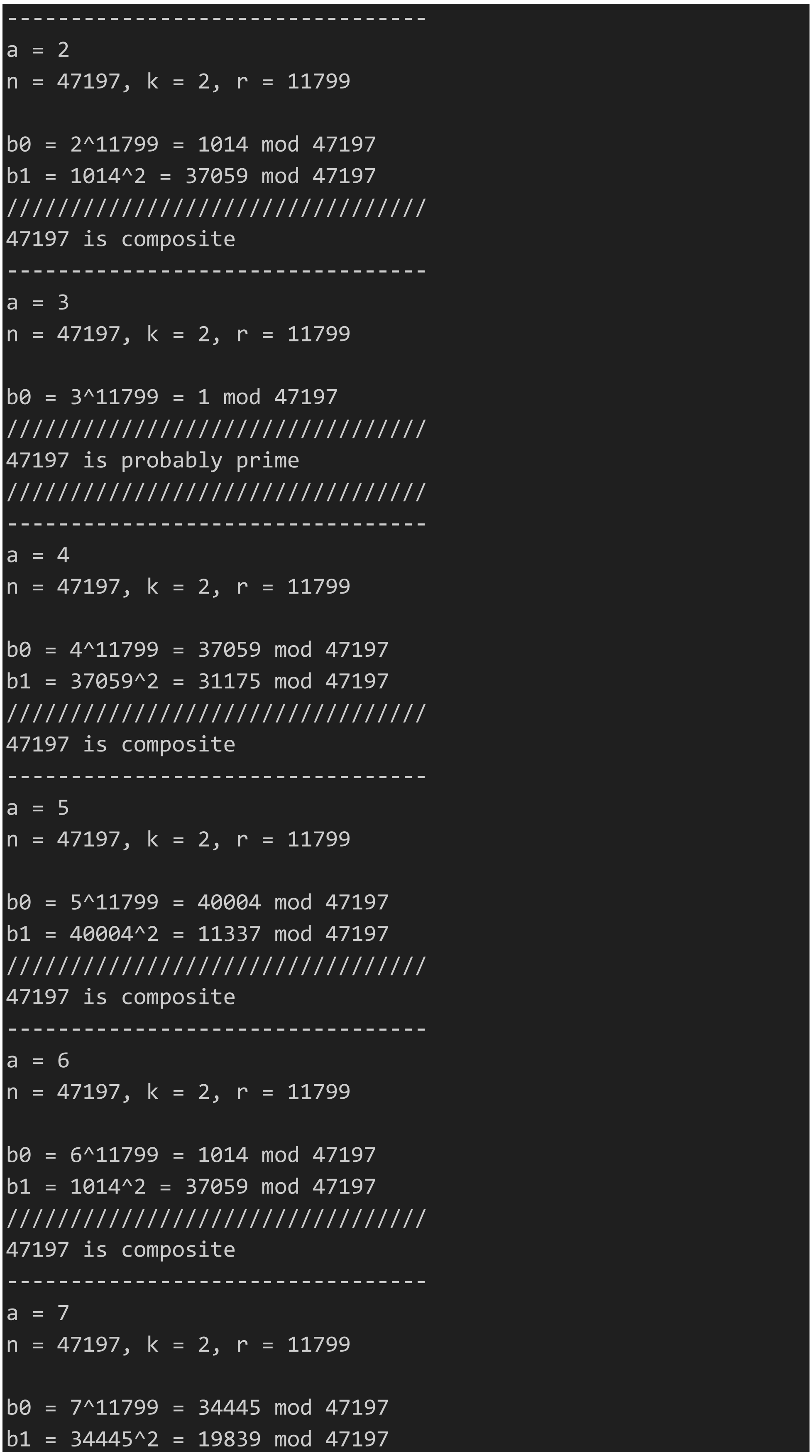
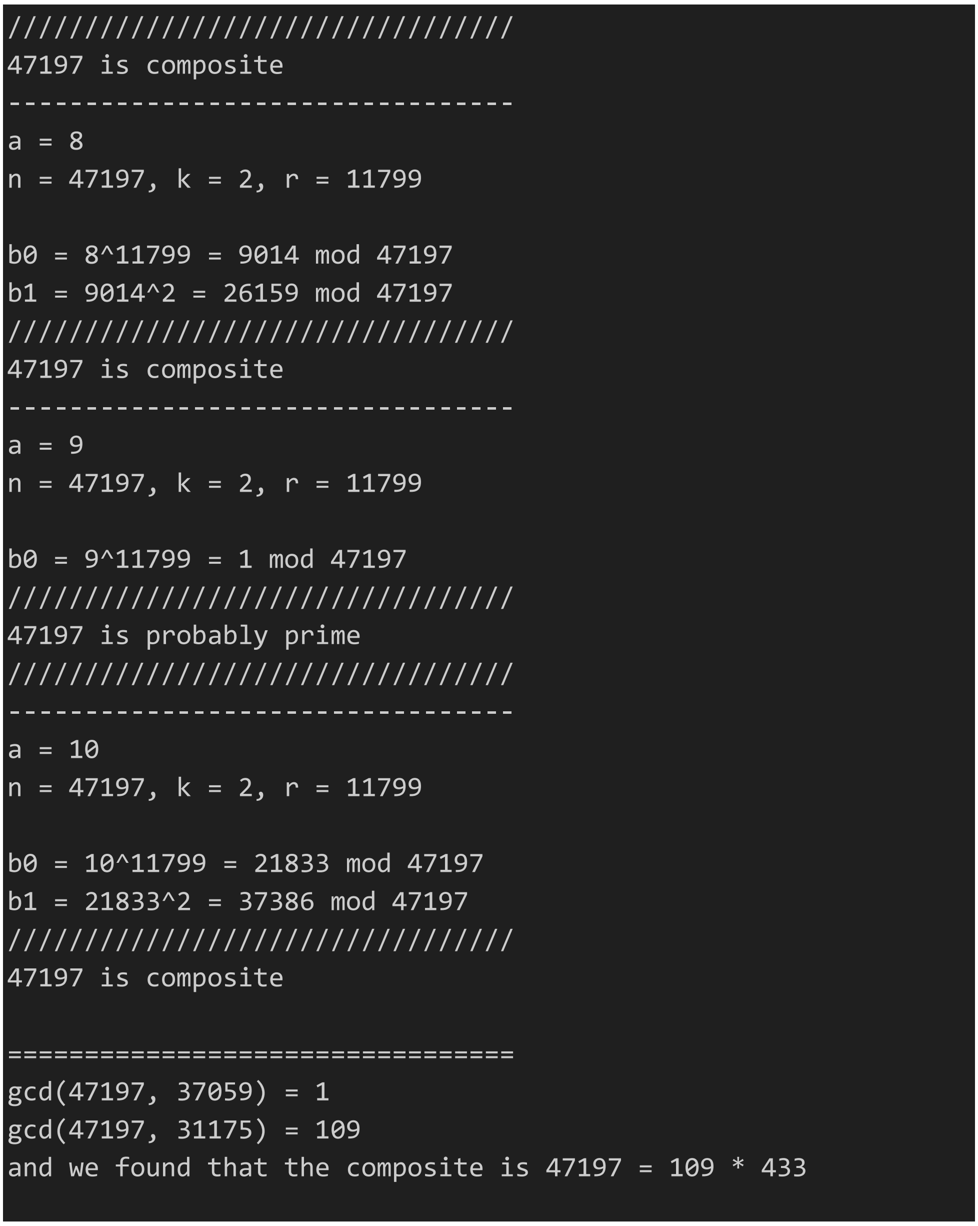
ב.



```
---------------------------------
a = 2
n = 47197, k = 2, r = 11799

b0 = 2^11799 = 1014 mod 47197
b1 = 1014^2 = 37059 mod 47197
/////////////////////////////////
47197 is composite
---------------------------------
a = 3
n = 47197, k = 2, r = 11799

b0 = 3^11799 = 1 mod 47197
/////////////////////////////////
47197 is probably prime
/////////////////////////////////
---------------------------------
a = 4
n = 47197, k = 2, r = 11799

b0 = 4^11799 = 37059 mod 47197
b1 = 37059^2 = 31175 mod 47197
/////////////////////////////////
47197 is composite
---------------------------------
a = 5
n = 47197, k = 2, r = 11799

b0 = 5^11799 = 40004 mod 47197
b1 = 40004^2 = 11337 mod 47197
/////////////////////////////////
47197 is composite
---------------------------------
a = 6
n = 47197, k = 2, r = 11799

b0 = 6^11799 = 1014 mod 47197
b1 = 1014^2 = 37059 mod 47197
/////////////////////////////////
47197 is composite
---------------------------------
a = 7
n = 47197, k = 2, r = 11799

b0 = 7^11799 = 34445 mod 47197
b1 = 34445^2 = 19839 mod 47197
```



```
/////////////////////////////////
47197 is composite
---------------------------------
a = 8
n = 47197, k = 2, r = 11799

b0 = 8^11799 = 9014 mod 47197
b1 = 9014^2 = 26159 mod 47197
/////////////////////////////////
47197 is composite
---------------------------------
a = 9
n = 47197, k = 2, r = 11799

b0 = 9^11799 = 1 mod 47197
/////////////////////////////////
47197 is probably prime
/////////////////////////////////
---------------------------------
a = 10
n = 47197, k = 2, r = 11799

b0 = 10^11799 = 21833 mod 47197
b1 = 21833^2 = 37386 mod 47197
/////////////////////////////////
47197 is composite

=================================
gcd(47197, 37059) = 1
gcd(47197, 31175) = 109
and we found that the composite is 47197 = 109 * 433
```

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.2