

Part 1

1)

A)
512 x 512 x 3

B)
786,432

C)
Red: 512
Green: 512
Blue: 512

D)
Largest Singular Value:

Red: 286.8193
Green: 261.8997
Blue: 241.4989

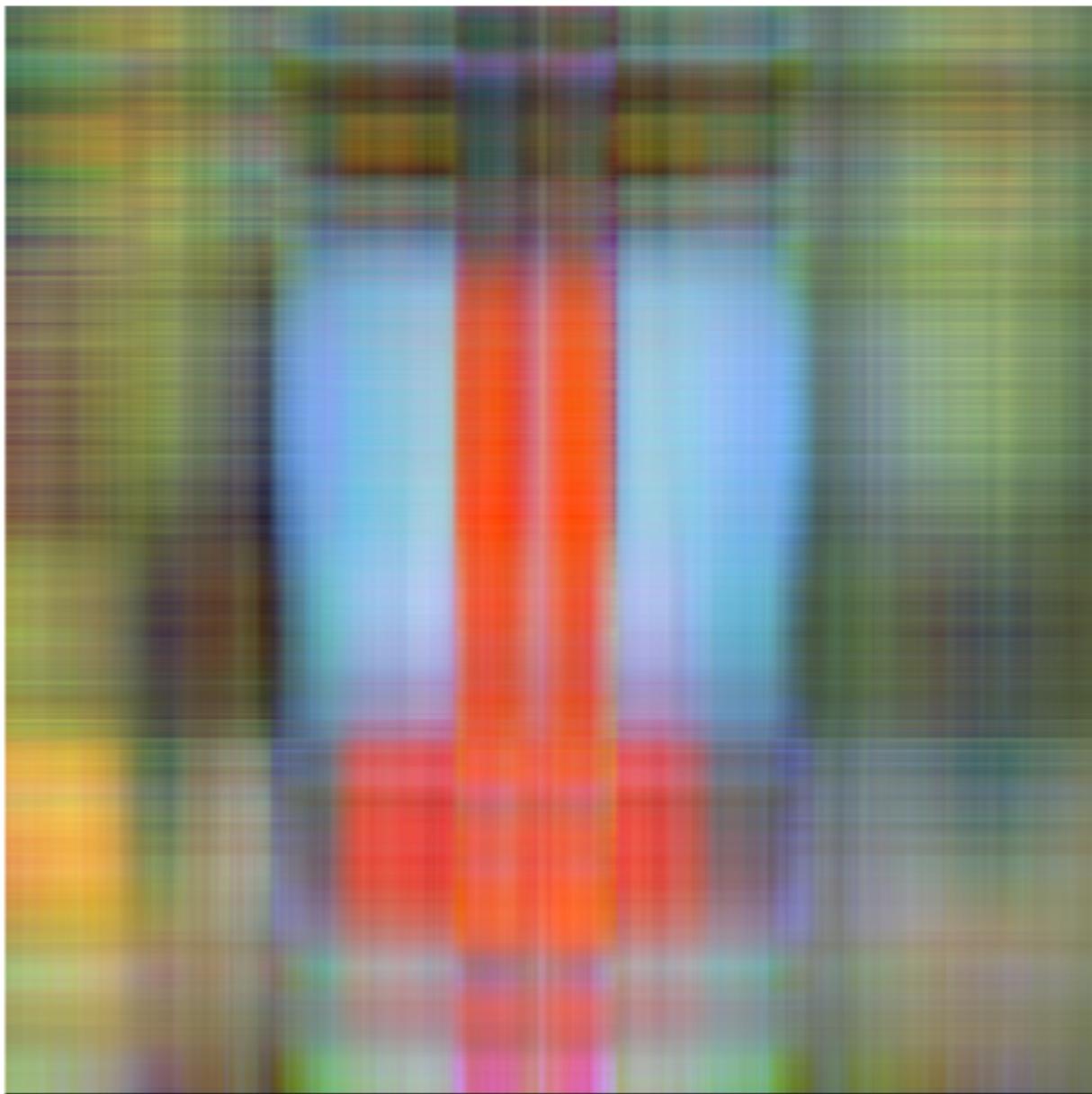
Smallest Singular Value:

Red: 0.0003
Green: 0.0002
Blue: 0.0002

2)

A)
K = 3

B)



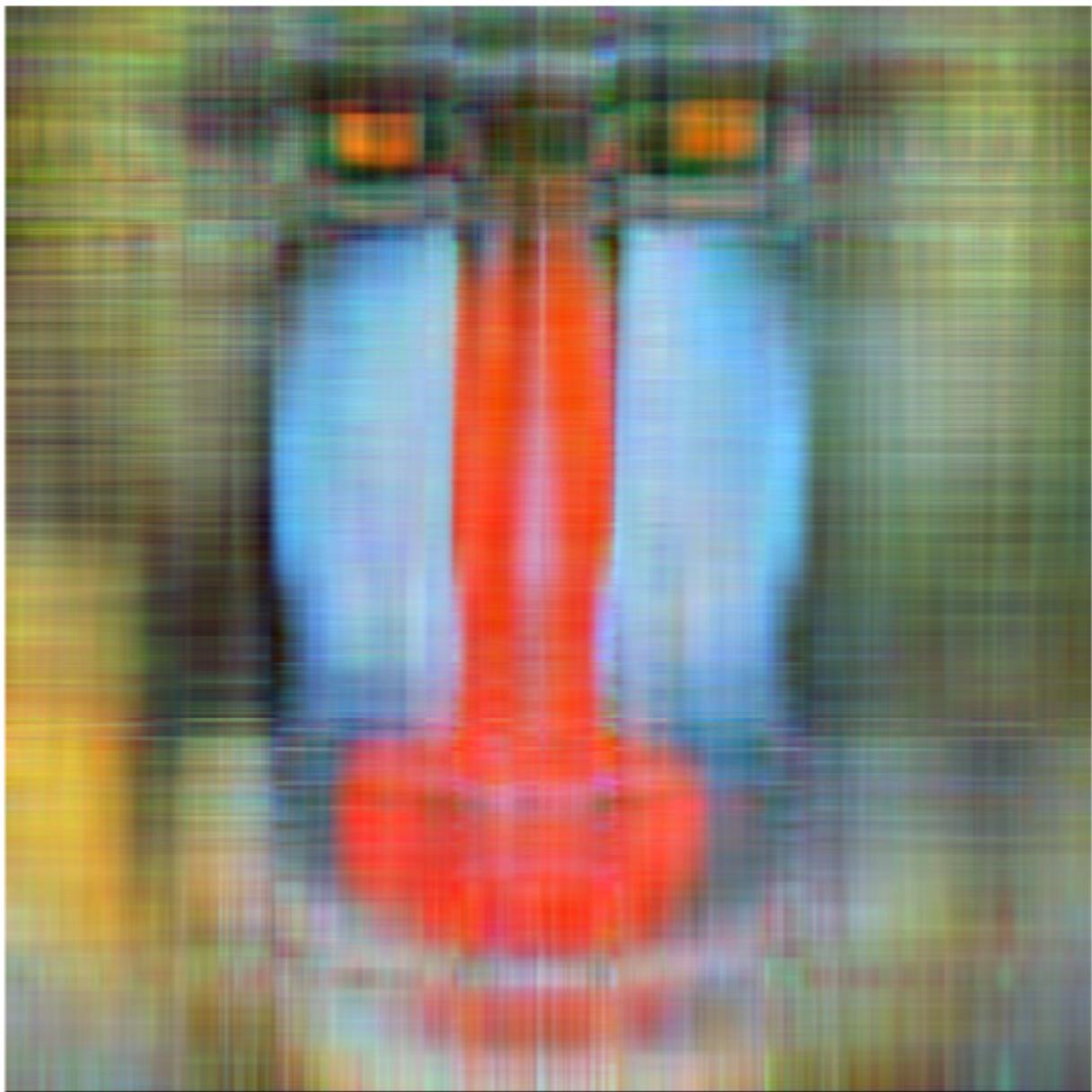
C)
9243

D)
9243/786,432 is about 1.175%

3)

A)
 $K = 7$

B)



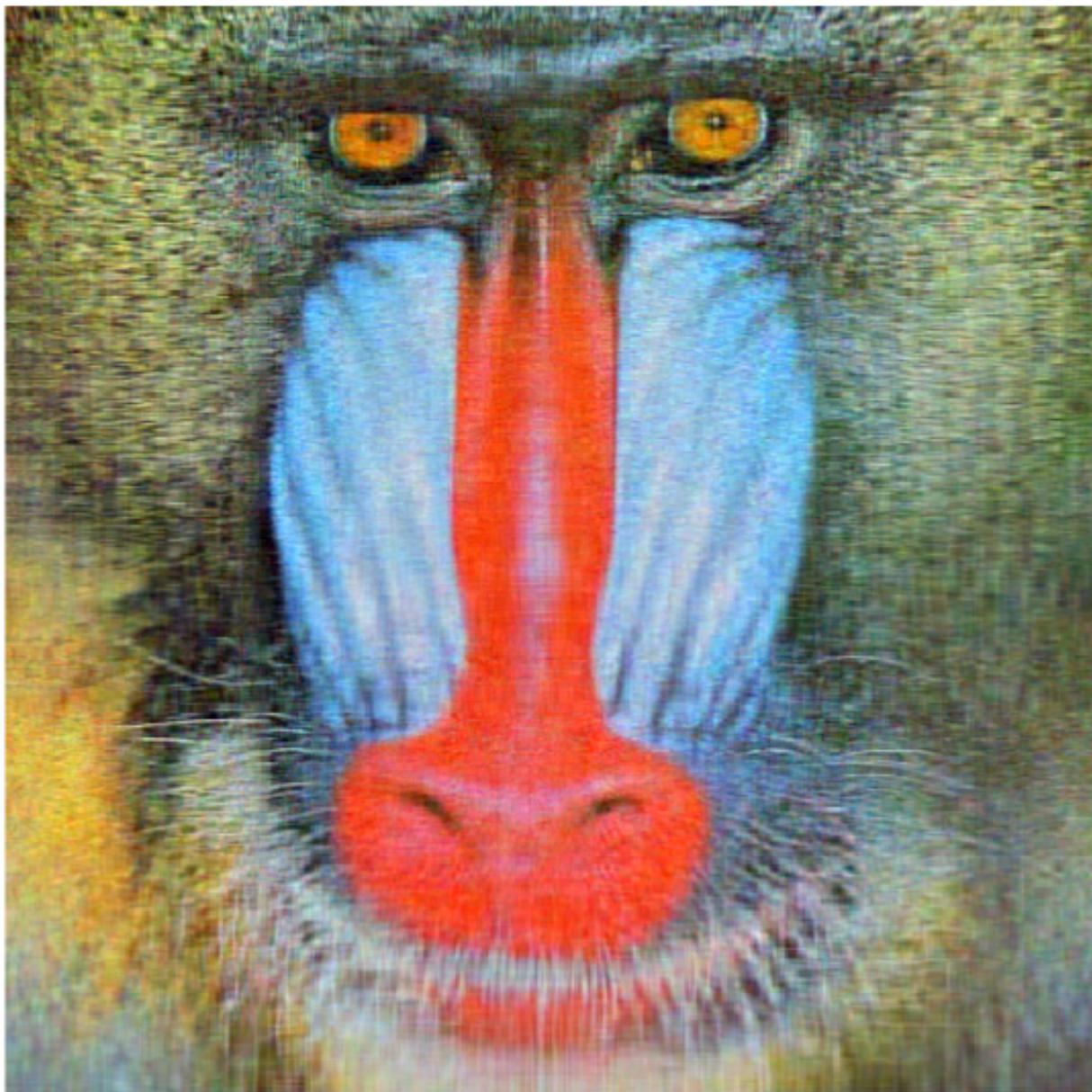
C)
21651

D)
2.75%

4)

A)
 $K = 40$

B)



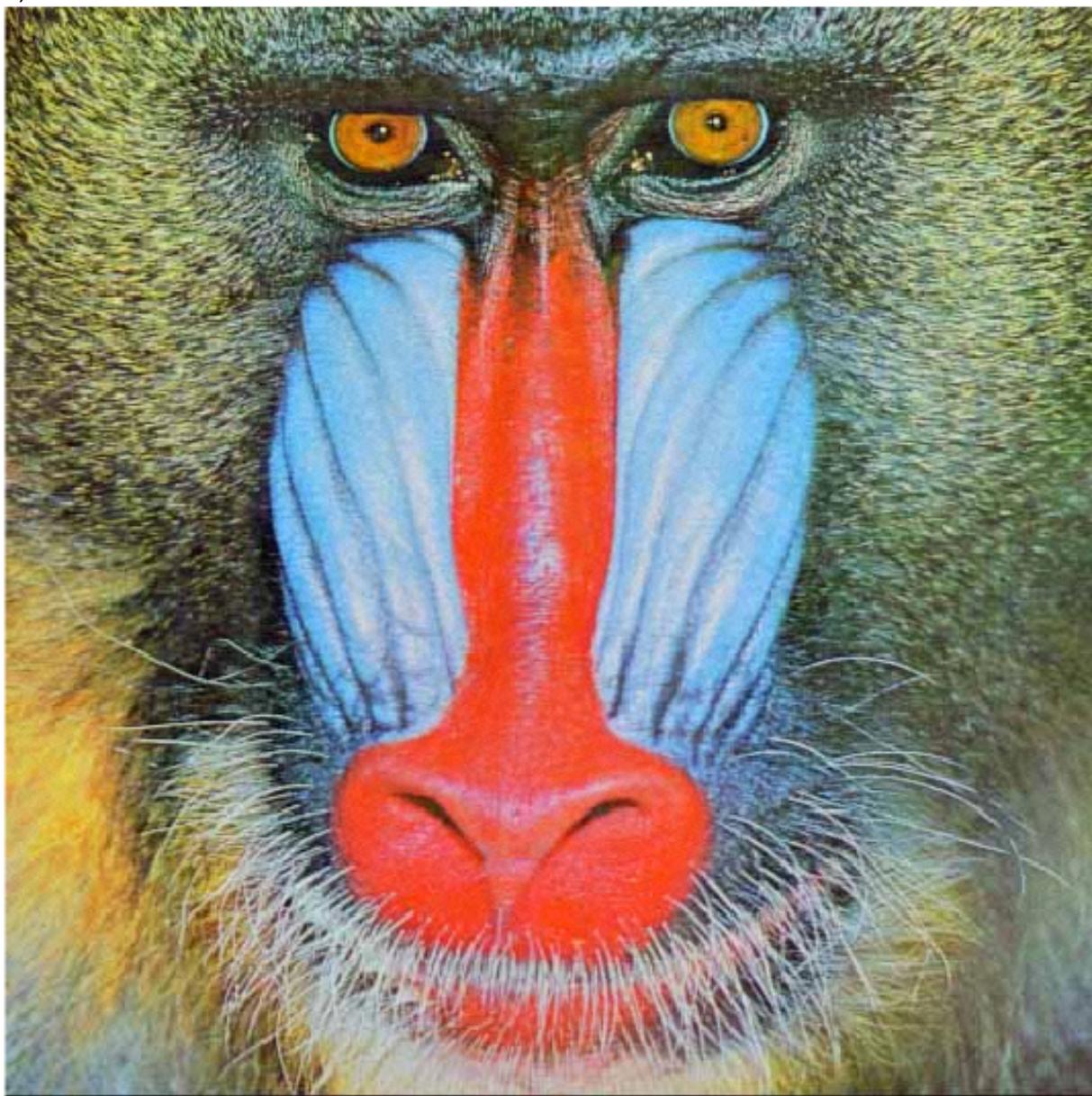
C)
127,680

D)
16.235%

5)

A)
 $K = 224$

B)



C)

838,656

D)

106.64%

Part 2

6)

A)
340x453x3

B)
462060

C)
Red: 340
Green: 340
Blue: 340

D)

Largest Singular Value:

Red: 199.3959
Green: 195.7406
Blue: 110.8040

Smallest Singular Value:

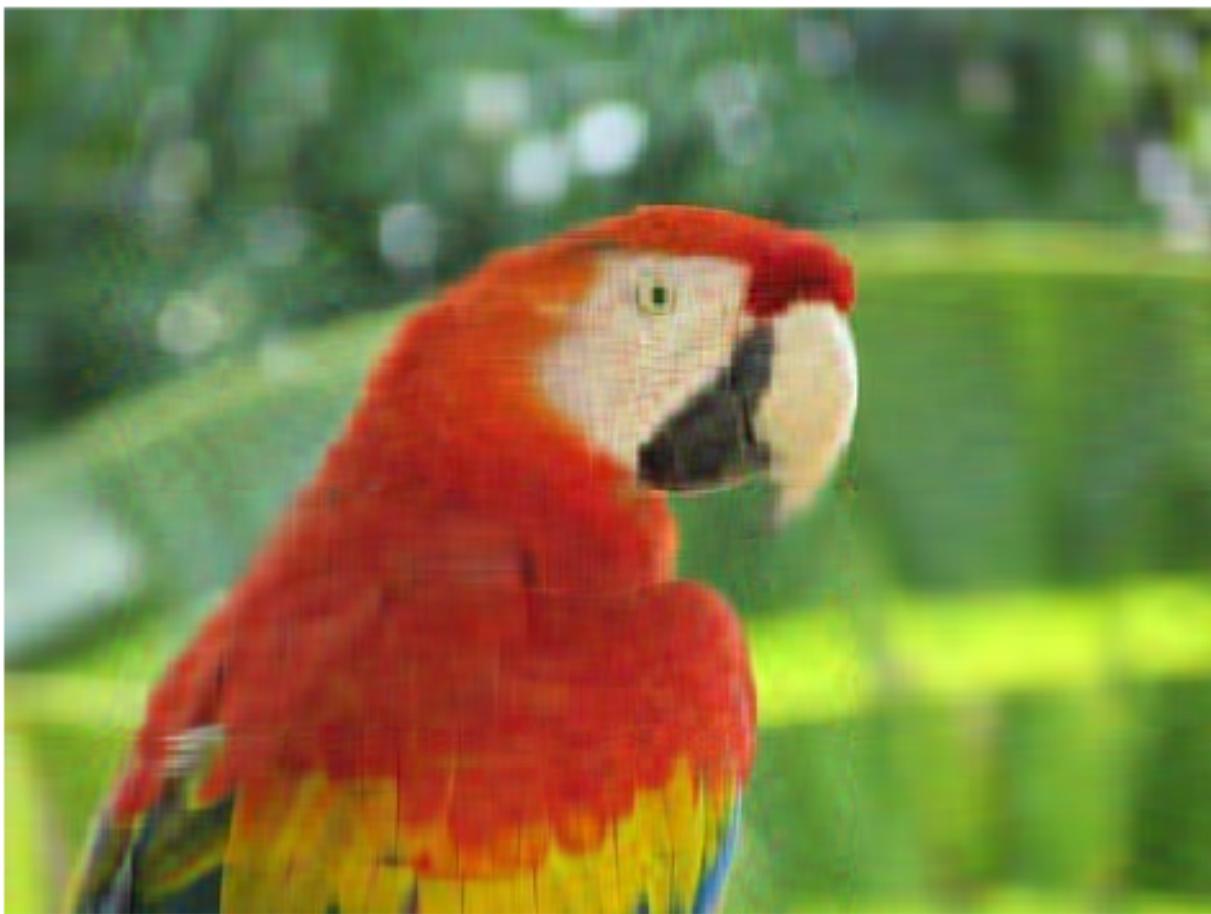
Red: 0.0091
Green: 0.0078
Blue: 0.0123

7)

A)

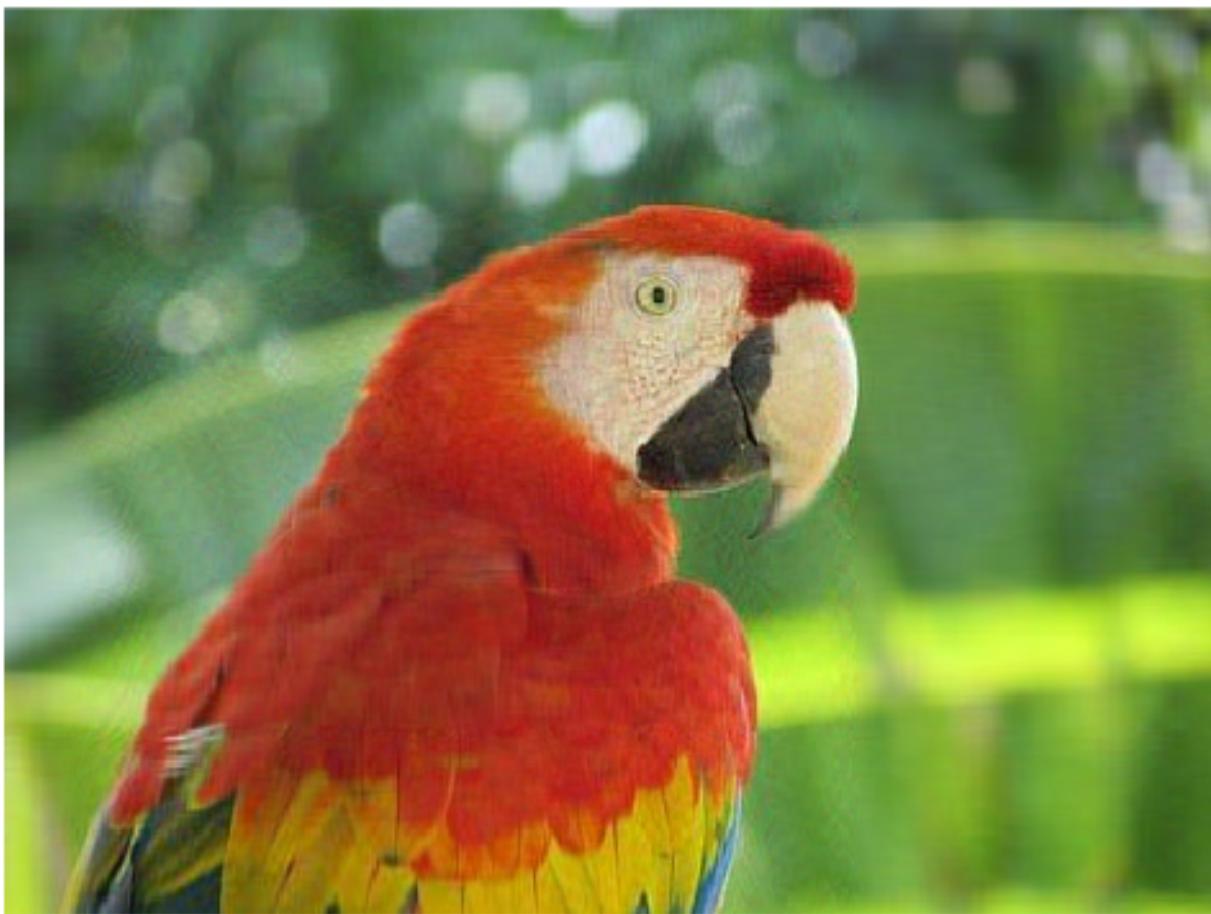
$793m+m^2$

B)
 $m = 28.1354$, approximately 29



C)

$m = 54.5191$, approximately 55



D)

$m = 125.733$, approximately 126



E)

$m = 226.591$, approximately 227

