Question 1)

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Question 1 – solution

Write a sage function to implement Euler’s Totient function [Hint: You may find the sage “factor” function useful here.]

def EulerPhi(n):

r"""

Euler's Phi Function for calcluating the number of positive integers less than n

that are relatively prime to n.

"""

n\_factored = factor(n);

output = 1

for j in xrange(len(n\_factored)):

pj = n\_factored[j][0]

ej = n\_factored[j][1]

output = output\*(p^e - p^(e-1))

return output