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Homework 1

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Homework 1-1

2.0/2.0 points (graded)

Choose all the prime numbers.

☒ 2011

☐ 2013

☐ 2015

☒ 2017

☐ 2019

☐ 2021

☐ 2023



Submit

Homework 1-2

2.0/2.0 points (graded)

Fill an integer into each blank.

$\varphi(1)$



$\varphi(2)$



$\varphi(3)$



$\varphi(4)$



$\varphi(6)$



$\varphi(12)$



$$\varphi(1) + \varphi(2) + \varphi(3) + \varphi(4) + \varphi(6) + \varphi(12)$$



Homework 1-3

2.0/2.0 points (graded)

In 2004, Green and Tao proved the following amazing result on prime numbers: for any given N , there exist an arithmetic progression of length N consisting of prime numbers only. Tao won a Fields Medal in 2006. For example, **3, 5 and 7** is an arithmetic progression of length **3** consisting of prime numbers only.

Find the maximum length of arithmetic progressions consisting of prime numbers only whose initial term is **5**.



Homework 1-4

2.0/2.0 points (graded)

What is the number of prime numbers less than **1, 000, 000** with last digit **3** (such as **3, 13, 23, 43, ...**)?

Choose the closest number

CHOOSE THE CLOSEST NUMBER.

☐ 10,000☒ 19,000 ✓☐ 39,000☐ 47,000

You have used 2 of 2 attempts

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 English ▼

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