Started on	Friday, 10 January 2025, 1:27 AM
State	Finished
Completed on	Friday, 10 January 2025, 1:27 AM
Time taken	18 secs
Marks	0.25/15.00
Grade	**1.80** out of 108.00 (**1.67**%)

Question 1

Incorrect

Mark 0.00 out of 1.00

EN: Find (if any) three prime numbers x, y, and z such that $xyz = 3531$. If such prime numbers do not exist write "**None**" without quotation marks.

ID: Carilah (jika ada) tiga bilangan prima x, y, dan z yang memenuhi $xyz = 3531$. Jika bilangan-bilangan yang dimaksud tidak ada tuliskan "**None**" tanpa tanda kutip.

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
x = ...
y = ...
z = ...

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Your code failed one or more hidden tests.
Your code must pass all tests to earn any marks. Try again.

▾ **Show/hide question author's solution (Python3)**

```
x = 3
y = 11
z = 107

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Incorrect

Marks for this submission: 0.00/1.00.

Question 2

Incorrect

Mark 0.00 out of 1.00

EN: Find (if any) three prime numbers x, y, and z such that $xyz = 3729$. If such prime numbers do not exist write "**None**" without quotation marks.

ID: Carilah (jika ada) tiga bilangan prima x, y, dan z yang memenuhi $xyz = 3729$. Jika bilangan-bilangan yang dimaksud tidak ada tuliskan "**None**" tanpa tanda kutip.

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
x = ...
y = ...
z = ...

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Your code failed one or more hidden tests.
Your code must pass all tests to earn any marks. Try again.

▾ **Show/hide question author's solution (Python3)**

```
x = 3
y = 11
z = 113

# erase ...  and put a number or type "None" without quotation marks
```

Incorrect

Marks for this submission: 0.00/1.00.

Question 3

Incorrect

Mark 0.00 out of 1.00

EN: Find (if any) three integers x, y, and z such that $2x^2 + 2y^2 + 2z^2 - 4xy = 0$ but $x \neq y \neq z$ (all x, y, and z are different). If such integers do not exist write "**None**" without quotation marks.

ID: Carilah (jika ada) tiga bilangan bulat x, y, dan z yang memenuhi $2x^2 + 2y^2 + 2z^2 - 4xy = 0$ tetapi $x \neq y \neq z$ (semua x, y, dan z berbeda). Jika bilangan-bilangan yang dimaksud tidak ada tuliskan "**None**" tanpa tanda kutip.

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
x = ...
y = ...
z = ...

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Your code failed one or more hidden tests.
Your code must pass all tests to earn any marks. Try again.

▾ **Show/hide question author's solution (Python3)**

```
x = None
y = None
z = None

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Incorrect

Marks for this submission: 0.00/1.00.

Question 4

Incorrect

Mark 0.00 out of 1.00

EN: Find (if any) three positive integers x, y, and z such that $2x^2 + 2y^2 + 2z^2 - 4xy = 0$ but $x \neq y \neq z$ (all x, y, and z are different). If such integers do not exist write "**None**" without quotation marks.

ID: Carilah (jika ada) tiga bilangan bulat positif$x$, y, dan z yang memenuhi $2x^2 + 2y^2 + 2z^2 - 4xy = 0$ tetapi $x \neq y \neq z$ (semua x, y, dan z berbeda). Jika bilangan-bilangan yang dimaksud tidak ada tuliskan "**None**" tanpa tanda kutip.

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
x = ...
y = ...
z = ...

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Your code failed one or more hidden tests.
Your code must pass all tests to earn any marks. Try again.

▾ **Show/hide question author's solution (Python3)**

```
x = None
y = None
z = None

# erase ...  and put a number or type "None" without quotation marks
# hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Incorrect

Marks for this submission: 0.00/1.00.

Question 5

Not answered

Mark 0.00 out of 1.00

EN: An integer m is divisible by an integer d if there is an integer k such that $m = k \cdot d$. Suppose a and b are integers such that a is divisible by 4 and b is divisible by 6.

Suppose we consider the following statements:

1. $S1$: $a + b$ is always divisible by 10.
2. $S2$: ab is always divisible by 12.
3. $S3$: $2a + b$ is always odd .
4. $S4$: $a(b + 1)$ is always divisible by 4.
5. $S5$: $9a - 5b$ is always odd.

Choose all statements that are true based on the previous assumption. Write your answer in the following Python format:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

For example, if you think that $S1$, $S2$, and $S3$ are the correct choices while $S4$ and $S5$ are incorrect, then you need to write

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

ID: Sebuah bilangan bulat m habis dibagi d jika terdapat bilangan bulat k sehingga $m = k \cdot d$. Misalkan a dan b adalah bilangan bulat dengan sifat a habis dibagi 4 dan b habis dibagi 6.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: $a + b$ selalu habis dibagi 10.
2. $S2$: ab selalu habis dibagi 12.
3. $S3$: $2a + b$ selalu ganjil.
4. $S4$: $a(b + 1)$ selalu habis dibagi 4.
5. $S5$: $9a - 5b$ selalu ganjil.

Piihlah semua pernyataan yang benar berdasarkan asumsi sebelumnya. Tuliskan jawaban Anda dalam format Python berikut:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

Sebagai contoh, jika Anda berpikir bahwa $S1$, $S2$, dan $S3$ adalah jawaban yang benar sedangkan $S4$ dan $S5$ salah, maka Anda perlu menulis

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
S1 = True/False
S2 = True/False
S3 = True/False
S4 = True/False
S5 = True/False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

▾ Show/hide question author's solution (Python3)

```
S1 = False
S2 = True
S3 = False
S4 = True
S5 = False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

Question 6

Incorrect

Mark 0.00 out of 1.00

EN: An integer m is divisible by an integer d if there is an integer k such that $m = k \cdot d$. Suppose a and b are integers such that a is divisible by 2 and b is divisible by 3.

Suppose we consider the following statements:

1. $S1$: $a + 2b$ is always divisible by 2.
2. $S2$: ab is always divisible by 5.
3. $S3$: $2a + b$ is always even.
4. $S4$: $a(b + 3)$ is always divisible by 3.
5. $S5$: $9a - 12b$ is always divisible by 36.

Choose all statements that are true based on the previous assumption. Write your answer in the following Python format:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

For example, if you think that $S1$, $S2$, and $S3$ are the correct choices while $S4$ and $S5$ are incorrect, then you need to write

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

ID: Sebuah bilangan bulat m habis dibagi d jika terdapat bilangan bulat k sehingga $m = k \cdot d$. Misalkan a dan b adalah bilangan bulat dengan sifat a habis dibagi 2 dan b habis dibagi 3.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: $a + 2b$ selalu habis dibagi 2.
2. $S2$: ab selalu habis dibagi 5.
3. $S3$: $2a + b$ selalu genap.
4. $S4$: $a(b + 3)$ selalu habis dibagi 3.
5. $S5$: $9a - 12b$ selalu habis dibagi 36.

Piihlah semua pernyataan yang benar berdasarkan asumsi sebelumnya. Tuliskan jawaban Anda dalam format Python berikut:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

Sebagai contoh, jika Anda berpikir bahwa $S1$, $S2$, dan $S3$ adalah jawaban yang benar sedangkan $S4$ dan $S5$ salah, maka Anda perlu menulis

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
S1 = True/False
S2 = True/False
S3 = True/False
S4 = True/False
S5 = True/False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

Testing was aborted due to error.

Show/hide question author's solution (Python3)

```
S1 = True
S2 = False
S3 = False
S4 = True
S5 = False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

Incorrect

Marks for this submission: 0.00/1.00.

Question 7

Not answered

Mark 0.00 out of 1.00

EN: An integer m is divisible by an integer d if there is an integer k such that $m = k \cdot d$. An integer is even if it is divisible by 2. An integer is odd if it is not even. Suppose $n = a + b + c$ and n is odd.

Suppose we consider the following statements:

1. $S1$: a is odd, b is odd, and c is odd is odd.
2. $S2$: at least one of a, b and c is odd.
3. $S3$: a is odd, b and c are even.
4. $S4$: at least one of a, b and c is even.
5. $S5$: a is even, b and c are odd.

Choose all statements that are true based on the previous assumption. Write your answer in the following Python format:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

For example, if you think that $S1$, $S2$, and $S3$ are the correct choices while $S4$ and $S5$ are incorrect, then you need to write

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

ID: Sebuah bilangan bulat m habis dibagi d jika terdapat bilangan bulat k sehingga $m = k \cdot d$. Sebuah bilangan dikatakan genap bila habis dibagi 2. Sebuah biilangan dikatakan ganjil jika tidak genap. Misalkan $n = a + b + c$ dan n ganjil.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: a ganjil, b ganjil,, dan c ganjil.
2. $S2$: setidaknya satu dari a, b, dan c ganjil.
3. $S3$: a ganjil, b, dan c genap.
4. $S4$: setidaknya satu dari a, b, dan c genap
5. $S5$: a genap, b dan c ganjil.

Piihlah semua pernyataan yang benar berdasarkan asumsi sebelumnya. Tuliskan jawaban Anda dalam format Python berikut:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

Sebagai contoh, jika Anda berpikir bahwa $S1$, $S2$, dan $S3$ adalah jawaban yang benar sedangkan $S4$ dan $S5$ salah, maka Anda perlu menulis

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
S1 = True/False
S2 = True/False
S3 = True/False
S4 = True/False
S5 = True/False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

▾ Show/hide question author's solution (Python3)

```
S1 = True
S2 = False
S3 = True
S4 = False
S5 = False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

Question 8

Not answered

Mark 0.00 out of 1.00

EN: An integer m is divisible by an integer d if there is an integer k such that $m = k \cdot d$. An integer is even if it is divisible by 2. An integer is odd if it is not even. Suppose $n = a + b + c$ and n is odd.

Suppose we consider the following statements:

1. $S1$: a, b, and c are always odd.
2. $S2$: a and b are odd and c is even.
3. $S3$: at least two of a, b, and c are odd.
4. $S4$: a and b are even, and c is odd.
5. $S5$: at least two of a, b, and c are even.

Choose all statements that are true based on the previous assumption. Write your answer in the following Python format:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

For example, if you think that $S1$, $S2$, and $S3$ are the correct choices while $S4$ and $S5$ are incorrect, then you need to write

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

ID: Sebuah bilangan bulat m habis dibagi d jika terdapat bilangan bulat k sehingga $m = k \cdot d$. Sebuah bilangan dikatakan genap bila habis dibagi 2. Sebuah biilangan dikatakan ganjil jika tidak genap. Misalkan $n = a + b + c$ dan n ganjil.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: a, b, dan c selalu ganjil.
2. $S2$: a dan b ganjil, dan c genap.
3. $S3$: setidaknya dua dari a, b, dan c ganjil.
4. $S4$: a dan b genap, dan c ganjil.
5. $S5$: setidaknya dua dari a, b, dan c genap.

Piihlah semua pernyataan yang benar berdasarkan asumsi sebelumnya. Tuliskan jawaban Anda dalam format Python berikut:

S1 = <True/False>

S2 = <True/False>

S3 = <True/False>

S4 = <True/False>

S5 = <True/False>

Sebagai contoh, jika Anda berpikir bahwa $S1$, $S2$, dan $S3$ adalah jawaban yang benar sedangkan $S4$ dan $S5$ salah, maka Anda perlu menulis

S1 = True

S2 = True

S3 = True

S4 = False

S5 = False

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
S1 = True/False
S2 = True/False
S3 = True/False
S4 = True/False
S5 = True/False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

▾ Show/hide question author's solution (Python3)

```
S1 = False
S2 = False
S3 = False
S4 = True
S5 = False

# assign either True or False for each statement, True and False start with uppercase letter
# berikan nilai True atau False untuk masing-masing statement, True dan False dimulai dengan huruf kapital
```

Question 9

Not answered

Marked out of 1.00

EN: In a jar, there are 95 candies as follows:

- 3 chocolate candies,
- 17 strawberry candies,
- 9 vanilla candies,
- 13 coffee candies.
- 15 mint cadies,
- 5 milk candies,
- 19 orange candies,
- 14 banana candies.

All candies have **the same and identical wrappers**. You are asked to **take a number of candies so that at least you get four different flavors** (for example, you get one chocolate candy, one strawberry candy, one vanilla candy, and one coffee candy; or one chocolate candy, one vanilla candy, one mint candy, and one milk candy; or one strawberry candy, one coffee candy, one orange candy, and one mint candy). What is the minimum number of candies should you take if the candies are taken **randomly**? (You must ensure that you get four different flavors.)

ID: Di sebuah toples terdapat 95 permen dengan rincian:

- 3 permen cokelat,
- 17 permen stroberi,
- 9 permen vanila,
- 13 permen kopi,
- 15 permen mint,
- 5 permen susu,
- 19 permen jeruk,
- 14 permen pisang.

Semua permen memiliki **bungkus yang sama dan identik**. Anda diminta untuk **mengambil sejumlah permen dengan syarat Anda memperoleh setidaknya empat rasa berbeda** (misalnya Anda memperoleh satu permen cokelat, satu permen stroberi, satu permen vanila, dan satu permen kopi; atau satu permen cokelat, satu permen vanila, satu permen mint, dan satu permen susu; atau satu permen stroberi, satu permen kopi, satu permen jeruk, dan satu permen mint). Paling sedikit, berapa banyak permen yang harus Anda ambil jika pengambilan dilakukan secara **acak**? (Anda harus memastikan bahwa Anda memperoleh empat rasa permen yang berbeda.)

Answer:

The correct answer is: 52

Question 10

Not answered

Marked out of 1.00

EN: In a jar, there are 84 candies as follows:

- 21 chocolate candies,
- 3 strawberry candies,
- 17 vanilla candies,
- 11 coffee candies.
- 14 mint cadies,
- 13 milk candies,
- 5 orange candies,

All candies have **the same and identical wrappers**. You are asked to **take a number of candies so that you get at least four flavors and each flavor is represented by at least two candies**. For example, you get two chocolate candies, two strawberry candies, two vanilla candies, and two coffee candies; or two mint candies, two milk candies, two orange candies, and two coffee candies. What is the minimum number of candies should you take if the candies are taken **randomly**? (You must ensure that you get at least four different flavors and each flavor is represented by at least two candies.)

ID: Di sebuah toples terdapat 84 permen dengan rincian:

- 21 permen cokelat,
- 3 permen stroberi,
- 17 permen vanila,
- 11 permen kopi,
- 14 permen mint,
- 13 permen susu,
- 5 permen jeruk,

Semua permen memiliki **bungkus yang sama dan identik**. Anda diminta untuk **mengambil sejumlah permen dengan syarat Anda memperoleh setidaknya empat rasa dan setiap rasa diwakili oleh setidaknya dua permen**. Sebagai contoh, Anda memperoleh dua permen cokelat, dua permen stroberi, dua permen vanila, dan dua permen kopi; atau dua permen mint, dua permen susu, dua permen jeruk, dan dua permen kopi. Paling sedikit, berapa banyak permen yang harus Anda ambil jika pengambilan dilakukan secara **acak**? (Anda harus memastikan bahwa Anda memperoleh setidaknya empat rasa permen yang berbeda dan setiap rasa diwakili oleh dua permen.)

Answer:

The correct answer is: 54

Question 11

Not answered

Marked out of 1.00

EN: Find the result of $3 + 10 + 17 + 24 + \cdots + 999\,999\,990 + 999\,999\,997 + 1\,000\,000\,004$. You may use a Python interpreter or the formula of arithmetic or geometric series you learn in high school. (Hint: use Python interpreter or MS Excel to ease your calculation. The answer is an integer consisting of 17 digits.)

Note: do not use periods, commas, or spaces as digit separators. For example, if your answer is $123\,456\,789\,987\,654\,321$ then write 123456789987654321.

ID: Carilah nilai dari $3 + 10 + 17 + 24 + \cdots + 999\,999\,990 + 999\,999\,997 + 1\,000\,000\,004$. Anda dapat memakai interpreter Python atau formula untuk deret aritmetika atau geometri yang Anda pelajari di sekolah menengah. (Petunjuk: gunakan interpreter Python atau MS Excel untuk mempermudah kalkulasi Anda. Jawaban adalah bilangan bulat yang terdiri dari 17 digit.)

Catatan: jangan menggunakan titik, koma, atau spasi untuk pemisah digit. Sebagai contoh, jika jawaban Anda adalah $123\,456\,789\,987\,654\,321$ maka tulis 123456789987654321.

Answer:

The correct answer is: 71428572500000000

Question 12

Not answered

Marked out of 1.00

EN: Find the result of $2 + 11 + 20 + 29 + \cdots + 999\,999\,983 + 999\,999\,992 + 1\,000\,000\,001$. You may use a Python interpreter or the formula of arithmetic or geometric series you learn in high school. (Hint: use Python interpreter or MS Excel to ease your calculation. The answer is an integer consisting of 17 digits.)

Note: do not use periods, commas, or spaces as digit separators. For example, if your answer is $123\,456\,789\,987\,654\,321$ then write 123456789987654321.

ID: Carilah nilai dari $2 + 11 + 20 + 29 + \cdots + 999\,999\,983 + 999\,999\,992 + 1\,000\,000\,001$. Anda dapat memakai interpreter Python atau formula untuk deret aritmetika atau geometri yang Anda pelajari di sekolah menengah. (Petunjuk: gunakan interpreter Python atau MS Excel untuk mempermudah kalkulasi Anda. Jawaban adalah bilangan bulat yang terdiri dari 17 digit.)

Catatan: jangan menggunakan titik, koma, atau spasi untuk pemisah digit. Sebagai contoh, jika jawaban Anda adalah $123\,456\,789\,987\,654\,321$ maka tulis 123456789987654321.

Answer:

The correct answer is: 55555556166666672

Question 13

Not answered

Marked out of 1.00

EN: A sequence a_n is defined recursively as follows:

$a_0 = 0, a_1 = 1$, and $a_n = (n-1) \cdot a_{n-1} + (n-2) \cdot a_{n-2}$ for any integer $n \geq 2$.

What is the value of a_4?

ID: Sebuah barisan a_n didefinisikan secara rekursif sebagai berikut:

$a_0 = 0, a_1 = 1$, dan $a_n = (n-1) \cdot a_{n-1} + (n-2) \cdot a_{n-2}$ untuk setiap bilangan bulat $n \geq 2$.

Berapakah nilai dari a_4?

Answer:

The correct answer is: 11

Question 14

Not answered

Marked out of 1.00

EN: A sequence a_n is defined recursively as follows:

$a_0 = 1, a_1 = 2, a_2 = 3$ and $a_n = 4n \cdot a_{n-1} + 3n \cdot a_{n-2} + 2n \cdot a_{n-3}$ for any integer $n \geq 3$.

What is the value of a_4?

ID: Sebuah barisan a_n didefinisikan secara rekursif sebagai berikut:

$a_0 = 1, a_1 = 2, a_2 = 3$, dan $a_n = 4n \cdot a_{n-1} + 3n \cdot a_{n-2} + 2n \cdot a_{n-3}$ untuk setiap bilangan bulat $n \geq 3$.

Berapakah nilai dari a_4?

Answer:

The correct answer is: 1012

Question 15

Partially correct

Mark 0.25 out of 1.00

EN: Construct a Python 3 function **sum(n)** that takes a positive integer n as an input and performs the following computation:

$$sum(n) = x(n) - y(n), \text{ where}$$
$$x(n) = 5 + 9 + 13 + \cdots + (4n-7) + (4n-3) + (4n+1)$$
$$y(n) = 5 + 8 + 11 + \cdots + (3n-4) + (3n-1) + (3n+2),$$

for example:

1. $sum(1) = x(1) - y(1) = 5 - 5 = 0,$
2. $sum(2) = x(2) - y(2) = (5+9) - (5+8) = 1,$
3. $sum(3) = x(3) - y(3) = (5+9+13) - (5+8+11) = 3.$

The value of n is between 1 and 10^{12}. The time limit for the computation is 1 second per test case. The memory limit for the computation is 16 MB. To make your code efficient, derive an explicit formula (closed form) of $sum(n)$ using your knowledge learned in high school. You may further justify the correctness of your formula using induction.

Python hint: if a, b, and c are integers and c divides ab, then the integer expression $(ab)/2$ is represented as $(a * b)//2$. The integer expression a^b is written as $a * *b$.

ID: Buatlah sebuah fungsi Python 3 **sum(n)** yang mengambil bilangan bulat positif n sebagai masukan dan melakukan komputasi berikut:

$$sum(n) = x(n) - y(n), \text{ dengan}$$
$$x(n) = 5 + 9 + 13 + \cdots + (4n-7) + (4n-3) + (4n+1)$$
$$y(n) = 5 + 8 + 11 + \cdots + (3n-4) + (3n-1) + (3n+2),$$

sebagai contoh:

1. $sum(1) = x(1) - y(1) = 5 - 5 = 0,$
2. $sum(2) = x(2) - y(2) = (5+9) - (5+8) = 1,$
3. $sum(3) = x(3) - y(3) = (5+9+13) - (5+8+11) = 3.$

Nilai dari n antara 1 dan 10^{12}. Batas waktu komputasi adalah 1 detik per kasus uji. Batas memori adalah 16 MB. Untuk membuat kode program Anda efisien, buatlah formula (bentuk tertutup) dari $sum(n)$ menggunakan pengetahuan Anda yang dipelajari di SMA. Anda dapat membuktikan kebenaran dari formula yang diperoleh menggunakan induksi.

Petunjuk Python: jika a, b, dan c adalah bilangan bulat dan c membagi ab, maka ekspresi $(ab)/2$ direpresentasikan sebagai $(a * b)//2$. Ekspresi bilangan bulat a^b ditulis sebagai $a * *b$.

For example:

Test	Input	Result
`print(sum(1))`	`print(sum(1))`	`0`
`print(sum(2))`	`print(sum(2))`	`1`
`print(sum(3))`	`print(sum(3))`	`3`
`print(sum(100))`	`print(sum(100))`	`4950`
`print(sum(1000000))`	`print(sum(1000000))`	`499999500000`
`print(sum(1000000000))`	`print(sum(1000000000))`	`499999999500000000`

Answer: (penalty regime: 20,40, ... %)

Reset answer

```
def sum(n):
    # fix the following code
    if n == 1: return (5 - 5)
    elif n == 2: return (5 + 9) - (5 + 8)
    elif n == 3: return (5 + 9 + 13) - (5 + 8 + 11)
    else: return 0 # you may fix this line
```

	Test	Input	Expected	Got	
✔	print(sum(1))	print(sum(1))	0	0	✔
✔	print(sum(2))	print(sum(2))	1	1	✔
✔	print(sum(3))	print(sum(3))	3	3	✔
✖	print(sum(100))	print(sum(100))	4950	0	✖
✖	print(sum(1000000))	print(sum(1000000))	499999500000	0	✖
✖	print(sum(1000000000))	print(sum(1000000000))	499999999500000000	0	✖

Some hidden test cases failed, too.

Show differences

▾ Show/hide question author's solution (Python3)

```
def sum(n):
    # fix the following code
    if n == 1: return (5 - 5)
    elif n == 2: return (5 + 9) - (5 + 8)
    elif n == 3: return (5 + 9 + 13) - (5 + 8 + 11)
    else: return (n*(n-1))//2 # you may fix this line
```

Partially correct

Marks for this submission: 0.25/1.00.