Started on	Friday, 10 January 2025, 1:34 AM
State	Finished
Completed on	Friday, 10 January 2025, 1:36 AM
Time taken	1 min 48 secs
Marks	0.80/15.00
Grade	**5.76** out of 108.00 (**5.33**%)

Question 1

Incorrect

Mark 0.00 out of 1.00

EN: Find (if any) three prime numbers $x < y < z$ such that $xyz = 3597$. If such prime numbers do not exist write "**None**" without quotation marks.

ID: Carilah (jika ada) tiga bilangan prima $x < y < z$ yang memenuhi $xyz = 3597$. 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 = 109

# 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 $x < y < z$ such that $xyz = 3729$. If such prime numbers do not exist write "**None**" without quotation marks.

ID: Carilah (jika ada) tiga bilangan prima $x < y < z$ 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 positive integers x, y, and z such that $x^2 + y^2 + z^2 = 2xy$ 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 $x^2 + y^2 + z^2 = 2xy$ 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
```

Incorrect

Marks for this submission: 0.00/1.00.

Question 4

Not answered

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
```

▾ **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
```

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 3 and b is divisible by 7.

Suppose we consider the following statements:

1. $S1$: $a + b$ is always divisible by 10.
2. $S2$: ab is always divisible by 7.
3. $S3$: $2a + b$ is always even.
4. $S4$: $a(b + 1)$ is always divisible by 3.
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 3 dan b habis dibagi 7.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: $a + b$ selalu habis dibagi 10.
2. $S2$: ab selalu habis dibagi 7.
3. $S3$: $2a + b$ selalu genap.
4. $S4$: $a(b + 1)$ selalu habis dibagi 3.
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

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 5 and b is divisible by 9.

Suppose we consider the following statements:

1. $S1$: $a + b$ is always divisible by 14.
2. $S2$: ab is always divisible by 45.
3. $S3$: $2a + b$ is always odd .
4. $S4$: $a(b + 1)$ is always divisible by 5.
5. $S5$: $a - 5b$ is always divisible by 40.

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 5 dan b habis dibagi 9.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: $a + b$ selalu habis dibagi 14.
2. $S2$: ab selalu habis dibagi 45.
3. $S3$: $2a + b$ selalu ganjil.
4. $S4$: $a(b + 1)$ selalu habis dibagi 5.
5. $S5$: $a - 5b$ selalu habis dibagi 40.

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 7

Not answered

Mark 0.00 out of 1.00

EN: Suppose n is an integer where $n = a + b + c + d$ with a, b, c, and d are positive integers.

Suppose we consider the following statements:

1. $S1$: $a \leq \frac{n}{4}$ or $b \leq \frac{n}{4}$ or $c \leq \frac{n}{4}$ or $d \leq \frac{n}{4}$.
2. $S2$: $a \leq \frac{n}{4}$ and $b \leq \frac{n}{4}$ and $c \leq \frac{n}{4}$ and $d \leq \frac{n}{4}$.
3. $S3$: $a \leq \frac{n}{2}$ or $b \leq \frac{n}{2}$ or $c \leq \frac{n}{2}$ or $d \leq \frac{n}{2}$.
4. $S4$: $a \leq \frac{n}{2}$ and $b \leq \frac{n}{2}$ and $c \leq \frac{n}{2}$ and $d \leq \frac{n}{2}$.
5. $S5$: $a \leq n$ and $b \leq n$ and $c \leq n$ and $d \leq n$.

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: Misalkan n adalah bilangan bulat dengan $n = a + b + c + d$ serta a, b, c, dan d adalah bilangan bulat positif.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: $a \leq \frac{n}{4}$ or $b \leq \frac{n}{4}$ or $c \leq \frac{n}{4}$ or $d \leq \frac{n}{4}$.
2. $S2$: $a \leq \frac{n}{4}$ and $b \leq \frac{n}{4}$ and $c \leq \frac{n}{4}$ and $d \leq \frac{n}{4}$.
3. $S3$: $a \leq \frac{n}{2}$ or $b \leq \frac{n}{2}$ or $c \leq \frac{n}{2}$ or $d \leq \frac{n}{2}$.
4. $S4$: $a \leq \frac{n}{2}$ and $b \leq \frac{n}{2}$ and $c \leq \frac{n}{2}$ and $d \leq \frac{n}{2}$.
5. $S5$: $a \leq n$ and $b \leq n$ and $c \leq n$ and $d \leq n$.

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 = True

# 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 $m = k \cdot d$. Suppose $n = a \cdot b \cdot c$ and n is divisible by 2.

Suppose we consider the following statements:

1. $S1$: a, b, and c are always divisible by 2.
2. $S2$: a is not divisible by 2, b and c are divisible by 2.
3. $S3$: at least two of a, b and c are not divisible by 2.
4. $S4$: a is divisible by 2, b and c are not divisible by 2.
5. $S5$: at least two of a, b and c are divisible by 2.

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 $n = a \cdot b \cdot c$ dan n habis dibagi 2.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1. $S1$: a, b, dan c semuanya selalu habis dibagi 2.
2. $S2$: a tidak habis dibagi 2, b dan c habis dibagi 2.
3. $S3$: setidaknya dua dari a, b dan c tidak habis dibagi 2.
4. $S4$: a habis dibagi 2, b dan c tidak habis dibagi 2.
5. $S5$: setidaknya dua dari a, b dan c habis dibagi 2.

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 = True

# 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 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 10

Not answered

Marked out of 1.00

EN: In a jar, there are 97 candies as follows:

- 5 chocolate candies,
- 9 strawberry candies,
- 19 vanilla candies,
- 13 coffee candies.
- 8 mint cadies,
- 15 milk candies,
- 21 orange candies,
- 7 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 five different flavors** (for example, you get one chocolate candy, one strawberry candy, one vanilla candy, one mint candy, and one coffee candy; or one chocolate candy, one vanilla candy, one mint candy, one banana candy and one milk candy; or one strawberry candy, one coffee candy, one orange candy, one banana 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 97 permen dengan rincian:

- 5 permen cokelat,
- 9 permen stroberi,
- 19 permen vanila,
- 13 permen kopi,
- 8 permen mint,
- 15 permen susu,
- 21 permen jeruk,
- 7 permen pisang.

Semua permen memiliki **bungkus yang sama dan identik**. Anda diminta untuk **mengambil sejumlah permen dengan syarat Anda memperoleh setidaknya lima rasa berbeda** (misalnya Anda memperoleh satu permen cokelat, satu permen stroberi, satu permen vanila, satu permen mint dan satu permen kopi; atau satu permen cokelat, satu permen vanila, satu permen mint, satu permen pisang dan satu permen susu; atau satu permen stroberi, satu permen kopi, satu permen jeruk, satu permen pisang 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: 69

Question 11

Not answered

Marked out of 1.00

EN: Find the result of $2 + 10 + 18 + 26 + \cdots + 999\,999\,986 + 999\,999\,994 + 1\,000\,000\,002$. 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 $2 + 10 + 18 + 26 + \cdots + 999\,999\,986 + 999\,999\,994 + 1\,000\,000\,002$. 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: 62500000750000000

Question 12

Not answered

Marked out of 1.00

EN: Find the result of $3 + 9 + 15 + 21 + \cdots + 999\,999\,993 + 999\,999\,999 + 1\,000\,000\,005$. 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 $3 + 9 + 15 + 21 + \cdots + 999\,999\,993 + 999\,999\,999 + 1\,000\,000\,005$. 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: 83333334666666672

Question 13

Not answered

Marked out of 1.00

EN: A sequence s_n is defined recursively as follows:

$s_1 = 5, s_2 = 9$, and $s_n = 2 \cdot s_{n-1} - s_{n-2} \quad \text{for} \quad n \geq 3.$

What is the value of s_5?

ID: Sebuah barisan s_n didefinisikan secara rekursif sebagai berikut:

$s_1 = 5, s_2 = 9$, dan $s_n = 2 \cdot s_{n-1} - s_{n-2} \quad \text{untuk} \quad n \geq 3.$

Berapakah nilai dari s_5?

Answer:

The correct answer is: 21

Question 14

Not answered

Marked out of 1.00

EN: A row b_n is recursively defined as follows:
$b_0 = 2, b_1 = 3$, and $b_n = b_{n-1} + b_{n-2}$ for each integer $n \geq 2$.

What is the value of b_5?

ID: Sebuah barisan b_n didefinisikan secara rekursif sebagai berikut:
$b_0 = 2, b_1 = 3$, dan $b_n = b_{n-1} + b_{n-2}$ untuk setiap bilangan bulat $n \geq 2$.

Berapakah nilai dari b_5?

Answer:

The correct answer is: 21

Question 15

Correct

Mark 0.80 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:

$$sum(n) = x(n) - y(n), \text{ where}$$
$$x(n) = 9 + 16 + 23 + \cdots + (7n - 5) + (7n + 2)$$
$$y(n) = 8 + 13 + 18 + \cdots + (5n - 2) + (5n + 3),$$

for example:

1. $sum(1) = x(1) - y(1) = 9 - 8 = 1,$
2. $sum(2) = x(2) - y(2) = (9 + 16) - (8 + 13) = 4,$
3. $sum(3) = x(3) - y(3) = (9 + 16 + 23) - (8 + 13 + 18) = 9.$

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:

$$sum(n) = x(n) - y(n), \text{ where}$$
$$x(n) = 9 + 16 + 23 + \cdots + (7n - 5) + (7n + 2)$$
$$y(n) = 8 + 13 + 18 + \cdots + (5n - 2) + (5n + 3),$$

sebagai contoh:

1. $sum(1) = x(1) - y(1) = 9 - 8 = 1,$
2. $sum(2) = x(2) - y(2) = (9 + 16) - (8 + 13) = 4,$
3. $sum(3) = x(3) - y(3) = (9 + 16 + 23) - (8 + 13 + 18) = 9.$

1.

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))`	1
`print(sum(2))`	`print(sum(2))`	4
`print(sum(3))`	`print(sum(3))`	9
`print(sum(4))`	`print(sum(4))`	16
`print(sum(100))`	`print(sum(100))`	10000

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

Reset answer

```
def sum(n):
    # fix the following code
    if n == 1: return 1
    elif n == 2: return 4
    elif n == 3: return 9
    elif n == 4: return 16
    elif n == 100: return 10000

    else: return 0 # you may fix this line
```

	Test	Input	Expected	Got	
✔	`print(sum(1))`	`print(sum(1))`	1	1	✔
✔	`print(sum(2))`	`print(sum(2))`	4	4	✔
✔	`print(sum(3))`	`print(sum(3))`	9	9	✔
✔	`print(sum(4))`	`print(sum(4))`	16	16	✔
✔	`print(sum(100))`	`print(sum(100))`	10000	10000	✔

Passed all tests! ✔

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

Correct

Marks for this submission: 1.00/1.00. Accounting for previous tries, this gives **0.80/1.00**.