

<b>Started on</b>	Friday, 10 January 2025, 1:36 AM
<b>State</b>	Finished
<b>Completed on</b>	Friday, 10 January 2025, 1:38 AM
<b>Time taken</b>	1 min 54 secs
<b>Marks</b>	0.08/15.00
<b>Grade</b>	<b>0.54</b> out of 108.00 ( <b>0.5%</b> )

**Question 1**

Incorrect

Mark 0.00 out of 1.00

**EN:** Find (if any) three prime numbers  $x$ ,  $y$ , and  $z$  such that  $xyz = 7535$ . 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  $xyz = 7535$ . Jika bilangan-bilangan yang dimaksud tidak ada tuliskan **"None"** tanpa tanda kutip.

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

[Reset answer](#)

```
1 | x = ...
2 | y = ...
3 | z = ...
4 |
5 | # erase ... and put a number or type "None" without quotation marks
6 | # 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)

```
1 | x = 5
2 | y = 11
3 | z = 137
4 |
5 | # erase ... and put a number or type "None" without quotation marks
6 | # hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

Incorrect

Marks for this submission: 0.00/1.00.

**Question 2**

Not answered

Marked out of 1.00

**EN:** The sum of five consecutive multiples of 4 is 2100. If the third number is  $a$  and the largest number is  $b$ , find  $(a + b)$ .

Note: an integer  $m$  is a multiple of 4 if  $m = 4k$  for some integer  $k$ . Some examples of multiples of 4 are 0, 4, 8, 12, ...

**ID:** Hasil penjumlahan lima bilangan kelipatan 4 yang berurutan adalah 2100. Jika bilangan ketiga adalah  $a$  dan bilangan terbesar adalah  $b$ , carilah  $(a + b)$ .

Catatan: sebuah bilangan  $m$  adalah kelipatan 4 jika  $m = 4k$  untuk suatu bilangan bulat  $k$ . Beberapa contoh kelipatan 4 adalah 0, 4, 8, 12, ...

Answer:

✖

The correct answer is: 848

**Question 3**

Incorrect

Mark 0.00 out of 1.00

**EN:** Find (if any) three positive integers  $x$ ,  $y$ , and  $z$  such that  $y^2 + z^2 + 2x^2 - 2yz = 0$  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  $y^2 + z^2 + 2x^2 - 2yz = 0$  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](#)

```

1 | x = ...
2 | y = ...
3 | z = ...
4 |
5 | # erase ... and put a number or type "None" without quotation marks
6 | # 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)

```

1 | x = None
2 | y = None
3 | z = None
4 |
5 | # erase ... and put a number or type "None" without quotation marks
6 | # hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip

```

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 positive integers  $x$ ,  $y$ , and  $z$  such that  $y^2 + z^2 - 2yz = -x^2$  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  $y^2 + z^2 - 2yz = -x^2$  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](#)

```
1 x = ...
2 y = ...
3 z = ...
4
5 # erase ... and put a number or type "None" without quotation marks
6 # hapus ... dan berikan bilangan atau ketik "None" tanpa tanda kutip
```

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

```
1 x = None
2 y = None
3 z = None
4
5 # erase ... and put a number or type "None" without quotation marks
6 # 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 9 and  $b$  is divisible by 6.

Suppose we consider the following statements:

1.  $S1: a + b$  is always divisible by 15.
2.  $S2: ab$  is always divisible by 18.
3.  $S3: 2a + b$  is always odd .
4.  $S4: a(b + 1)$  is always divisible by 3.
5.  $S5: a - 5b$  is always 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  $m = k \cdot d$ . Misalkan  $a$  dan  $b$  adalah bilangan bulat dengan sifat  $a$  habis dibagi 9 dan  $b$  habis dibagi 6.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1.  $S1: a + b$  selalu habis dibagi 15.
2.  $S2: ab$  selalu habis dibagi 18.
3.  $S3: 2a + b$  selalu ganjil.
4.  $S4: a(b + 1)$  selalu habis dibagi 3.
5.  $S5: 9a - 5b$  selalu genap.

Pilihlah 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

```
1 S1 = True/False
2 S2 = True/False
3 S3 = True/False
4 S4 = True/False
5 S5 = True/False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # berikan nilai True atau False untuk masing-masing statement True dan False dimulai dengan huruf kapital
```

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

```
1 S1 = False
2 S2 = True
3 S3 = False
4 S4 = True
5 S5 = False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # 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 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.

Pilihlah 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

```
1 S1 = True/False
2 S2 = True/False
3 S3 = True/False
4 S4 = True/False
5 S5 = True/False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # berikan nilai True atau False untuk masing-masing statement True dan False dimulai dengan huruf kapital
```

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

```
1 S1 = False
2 S2 = True
3 S3 = False
4 S4 = True
5 S5 = False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # 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:** 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.  $S2$ : at least one of  $a$ ,  $b$ , and  $c$  is not divisible by 2.
3.  $S3$ : at least two of  $a$ ,  $b$ , and  $c$  are not divisible by 2.
4.  $S4$ : at least one of  $a$ ,  $b$ , and  $c$  is 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.  $S2$ : setidaknya satu dari  $a$ ,  $b$ , dan  $c$  tidak habis dibagi 2.
3.  $S3$ : setidaknya dua dari  $a$ ,  $b$ , dan  $c$  tidak habis dibagi 2.
4.  $S4$ : setidaknya satu dari  $a$ ,  $b$ , dan  $c$  habis dibagi 2.
5.  $S5$ : setidaknya dua dari  $a$ ,  $b$ , dan  $c$  habis dibagi 2.

Pilihlah 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

```
1 S1 = True/False
2 S2 = True/False
3 S3 = True/False
4 S4 = True/False
5 S5 = True/False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # berikan nilai True atau False untuk masing-masing statement True dan False dimulai dengan huruf kapital
```

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

```
1 S1 = False
2 S2 = False
3 S3 = False
4 S4 = True
5 S5 = False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # 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 7.

Suppose we consider the following statements:

1.  $S1$ :  $a$ ,  $b$ , and  $c$  are always divisible by 7.
2.  $S2$ : at least one of  $a$ ,  $b$ , and  $c$  is not divisible by 7.
3.  $S3$ : at least two of  $a$ ,  $b$ , and  $c$  are not divisible by 7.
4.  $S4$ : at least one of  $a$ ,  $b$ , and  $c$  is divisible by 7.
5.  $S5$ : at least two of  $a$ ,  $b$ , and  $c$  are divisible by 7.

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 7.

Misalkan kita meninjau pernyataan-pernyataan berikut:

1.  $S1$ :  $a$ ,  $b$ , dan  $c$  semuanya selalu habis dibagi 7.
2.  $S2$ : setidaknya satu dari  $a$ ,  $b$ , dan  $c$  tidak habis dibagi 7.
3.  $S3$ : setidaknya dua dari  $a$ ,  $b$ , dan  $c$  tidak habis dibagi 7.
4.  $S4$ : setidaknya satu dari  $a$ ,  $b$ , dan  $c$  habis dibagi 7.
5.  $S5$ : setidaknya dua dari  $a$ ,  $b$ , dan  $c$  habis dibagi 7.

Pilihlah 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

```
1 S1 = True/False
2 S2 = True/False
3 S3 = True/False
4 S4 = True/False
5 S5 = True/False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # berikan nilai True atau False untuk masing-masing statement True dan False dimulai dengan huruf kapital
```

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

```
1 S1 = False
2 S2 = False
3 S3 = False
4 S4 = True
5 S5 = False
6
7 # assign either True or False for each statement, True and False start with uppercase letter
8 # 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 93 candies as follows:

- 5 chocolate candies,
- 9 strawberry candies,
- 19 vanilla candies,
- 13 coffee candies.
- 8 mint candies,
- 11 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 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 93 permen dengan rincian:

- 5 permen coklat,
- 9 permen stroberi,
- 19 permen vanila,
- 13 permen kopi,
- 8 permen mint,
- 11 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 empat rasa berbeda** (misalnya Anda memperoleh satu permen coklat, satu permen stroberi, satu permen vanila, dan satu permen kopi; atau satu permen coklat, 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: 54

**Question 10**

Not answered

Marked out of 1.00

**EN:** In a jar, there are 81 candies as follows:

- 3 chocolate candies,
- 17 strawberry candies,
- 9 vanilla candies,
- 13 coffee candies.
- 15 mint candies,
- 5 milk candies,
- 19 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 81 permen dengan rincian:

- 3 permen coklat,
- 17 permen stroberi,
- 9 permen vanila,
- 13 permen kopi,
- 15 permen mint,
- 5 permen susu,
- 19 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 coklat, 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: 53

**Question 11**

Not answered

Marked out of 1.00

**EN:** Find the result of  $2 + 11 + 20 + 29 + \dots + 999\,999\,983 + 999\,999\,992 + 1\,000\,000\,001$ . 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  $2 + 11 + 20 + 29 + \dots + 999\,999\,983 + 999\,999\,992 + 1\,000\,000\,001$ . 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 12**

Not answered

Marked out of 1.00

**EN:** Find the result of  $3 + 10 + 17 + 24 + \dots + 999\,999\,990 + 999\,999\,997 + 1\,000\,000\,004$ . 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  $3 + 10 + 17 + 24 + \dots + 999\,999\,990 + 999\,999\,997 + 1\,000\,000\,004$ . 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 13**

Not answered

Marked out of 1.00

**EN:** A sequence  $a_n$  is defined recursively as follows:

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

What is the value of  $a_4$ ?**ID:** Sebuah barisan  $a_n$  didefinisikan secara rekursif sebagai berikut:

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

Berapakah nilai dari  $a_4$ ?

Answer:



The correct answer is: 1012

**Question 14**

Not answered

Marked out of 1.00

**EN:** A sequence  $c_n$  is defined recursively as follows:

$$c_0 = 1, c_1 = 2, \text{ and } c_n = 2 \cdot c_{n-1} + 3 \cdot c_{n-2} \text{ for each integer } n \geq 2.$$

What is the value of  $c_4$ ?**IN:** Sebuah barisan  $c_n$  didefinisikan secara rekursif sebagai berikut:

$$c_0 = 1, c_1 = 2, \text{ dan } c_n = 2 \cdot c_{n-1} + 3 \cdot c_{n-2} \text{ untuk setiap bilangan bulat } n \geq 2.$$

Berapakah nilai dari  $c_4$ ?

Answer:



The correct answer is: 61

**Question 15**

Partially correct

Mark 0.08 out of 1.00

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

$$\text{sum\_sequence}(n) = 3 + 8 + 13 + \dots + (5n - 12) + (5n - 7) + (5n - 2)$$

The sequence is formed by the series  $5n - 2$  for  $n \geq 1$ . The value of  $n$  is between 1 and  $10^9$ . 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_sequence(n)` using your knowledge learned in high school. You may further justify the correctness of your formula using mathematical induction.

Python hint: If  $a$  and  $b$  are integers and  $a$  divides  $b$ , then the sum of an arithmetic sequence can be found using the formula  $(n/2) \times (\text{first\_term} + \text{last\_term})$ .

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

$$\text{sum\_sequence}(n) = 3 + 8 + 13 + \dots + (5n - 12) + (5n - 7) + (5n - 2)$$

Urutan tersebut dibentuk oleh seri  $5n - 2$  untuk  $n \geq 1$ . Nilai dari  $n$  adalah antara 1 dan  $10^9$ . Batas waktu komputasi adalah 1 detik per kasus uji. Batas memori adalah 16 MB. Untuk membuat kode program Anda efisien, buatlah formula tertutup (bentuk tertutup) dari `sum_sequence(n)` menggunakan pengetahuan Anda yang dipelajari di sekolah menengah. Anda dapat membenarkan kebenaran dari formula Anda menggunakan induksi matematika.

Petunjuk Python: Jika  $a$  dan  $b$  adalah bilangan bulat dan  $a$  membagi  $b$ , maka jumlah dari sebuah deret aritmatika dapat ditemukan menggunakan formula  $(n/2) \times (\text{suku\_pertama} + \text{suku\_terakhir})$ .

**For example:**

Test	Input	Result
<code>print(sum_sequence(1))</code>	<code>print(sum_sequence(1))</code>	3.0
<code>print(sum_sequence(2))</code>	<code>print(sum_sequence(2))</code>	11.0
<code>print(sum_sequence(3))</code>	<code>print(sum_sequence(3))</code>	24.0
<code>print(sum_sequence(4))</code>	<code>print(sum_sequence(4))</code>	42.0
<code>print(sum_sequence(5))</code>	<code>print(sum_sequence(5))</code>	65.0
<code>print(sum_sequence(6))</code>	<code>print(sum_sequence(6))</code>	93.0
<code>print(sum_sequence(7))</code>	<code>print(sum_sequence(7))</code>	126.0
<code>print(sum_sequence(8))</code>	<code>print(sum_sequence(8))</code>	164.0

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

[Reset answer](#)

```

1 def sum_sequence(n):
2     # fix the following code
3     if n == 1: return 3.0
4     elif n == 2: return 2 + 7
5     elif n == 3: return 2 + 7 + 12
6     else: return 0 # you may fix this line

```



	Test	Input	Expected	Got	
✓	print(sum_sequence(1))	print(sum_sequence(1))	3.0	3.0	✓
✗	print(sum_sequence(2))	print(sum_sequence(2))	11.0	9	✗
✗	print(sum_sequence(3))	print(sum_sequence(3))	24.0	21	✗
✗	print(sum_sequence(4))	print(sum_sequence(4))	42.0	0	✗
✗	print(sum_sequence(5))	print(sum_sequence(5))	65.0	0	✗
✗	print(sum_sequence(6))	print(sum_sequence(6))	93.0	0	✗

Some hidden test cases failed, too.

[Show differences](#)

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

```
1 def sum_sequence(n):  
2     first_term = 3  
3     last_term = 5*n - 2  
4     return n/2 * (first_term + last_term)  
r
```

Partially correct

Marks for this submission: 0.13/1.00. Accounting for previous tries, this gives **0.08/1.00**.