Concepts tested: integer operators, if / else statements.

The Luhn Sum algorithm is a mathematical way to check if a credit card number is valid. The Luhn Sum algorithm works as follows:

1. For a credit card number, multiply every other digit by 2, starting with the number's second-to-last digit, and then add those products' **digits** together.
2. Add the sum calculated in step 1 to the sum of the digits that weren't multiplied by 2.
3. If the total's last digit is 0, the number is valid.

For example, consider the credit card number 4003600000000014.

Step 1: First, isolate every other digit, starting with the 2nd last digit.

4003600000000014

Step 2: Then, multiply these digits by 2.

8, 0, 12, 0, 0, 0, 0, 2

Step 3: Then, add these **DIGITS** together (not the numbers themselves)!

8 + 1 + 2 + 2 = 13

Step 4: Then, sum up the remaining digits that were **NOT** multiplied by 2.

4003600000000014

0 + 3 + 0 + 0 + 0 + 0 + 0 + 4 = 7

Step 5: Finally, add up the sums in step 3 and 4 together

13 + 7 = 20

Step 6: This number (20) ends in 0, hence this card number is valid.

For this exercise, you may assume that:

AMEX cards have 15 digits and start with either 34 or 37.

MASTERCARD cards have 16 digits and start with either 51, 52, 53, 54 or 55.

VISA cards have either 13 or 16 digits and start with a 4.

Inside the file credit.py, implement the function *check_card(n)* which takes in a credit card number which is an integer *n*.

The function should return:

- “AMEX” if the card number *n* passes the Luhn Sum check AND satisfies the AMEX requirements listed above.
- “MASTERCARD” if the card number *n* passes the Luhn Sum check AND satisfies the MASTERCARD requirements listed above.
- “VISA” if the card number *n* passes the Luhn Sum check AND satisfies the VISA requirements listed above.
- “INVALID” otherwise.

Bonus challenge: implement the **entire** function using only a **one-line return statement**.

If your function has been implemented correctly, it should behave as per the following:

```
>>> check_card(378282246310005)
AMEX
>>> check_card(371449635398431)
AMEX
>>> check_card(378734493671000)
AMEX
>>> check_card(5555555555554444)
MASTERCARD
>>> check_card(5105105105105100)
MASTERCARD
>>> check_card(4111111111111111)
VISA
>>> check_card(4012888888881881)
VISA
>>> check_card(4222222222222)
VISA
>>> check_card(6176292929)
INVALID
```