

## Problem Set:

**Directions:** Record your final answers in the table below. Show your work in the space provided under the table for each problem.

Problem	Credit Card Number to Check	Passes First Check Number of Digits ✓ OR ✗	Passes 2nd Check Starting Values ✓ OR ✗	Passed 3rd Check Checksum ✓ OR ✗	Type of Card or Invalid
1	342154612121212	✓ A	✓	✓	valid
2	4697938719461569	✓ V	✓	✓	valid
3	5145645612345612	✓ M	✓	✗	invalid
4	5168574463118134	✓ M	✓	✓	invalid
5	376124367838558	✓ A	✓	✓	valid
6	4126548789456	✓ V	✓	✗	invalid

1) 3 4 2 1 5 4 6 1 2 1 2 1 2 1 2

$\times 2$  1 1 1 1 1 1 1

8 + 2 + 8 + 2 + 2 + 2 + 2 = 26

3 + 2 + 5 + 6 + 2 + 2 + 2 + 2 = 24

$$26 + 24 = 50 \% 10 = 0$$

valid



2) 4 6 9 7 9 3 8 7 1 9 4 6 1 5 6 9

2x 1

$$8 + 1+8 + 1+8 + 1+6 + 2 + 8 + 2 + (1+2) = 48$$

$$6 + 7 + 3 + 7 + 9 + 6 + 5 + 9 = 52$$

$$48 + 52 = 100 \% 10 = 0$$

valid

3) 5 1 4 5 6 4 5 6 1 2 3 4 5 6 1 2

2x 1

$$1+0 + 8 + 1+2 + 1+0 + 2 + 6 + 1+0 + 2 = 24$$

$$1 + 5 + 4 + 6 + 2 + 4 + 6 + 2 = 30$$

$$24 + 30 = 54 \% 10 \neq 0$$

invalid

4) 5 1 6 8 5 7 4 4 6 3 1 1 8 1 3 4

2x 1

$$1+0 + 1+2 + 1+0 + 8 + 1+2 + 2 + 1+6 + 6 = 31$$

$$1 + 8 + 7 + 4 + 3 + 1 + 1 + 4 = 29$$

$$29 + 31 = 60 \% 10 \neq 0$$

invalid



5) 3 7 6 1 2 4 3 6 7 8 3 8 5 5 8

2x)

1 1 1 1 1 1 1 1

$$1+4 + 2 + 8 + 1+2 + 1+6 + 1+6 + 1+0 = 33$$

$$3 + 6 + 2 + 3 + 7 + 3 + 5 + 8 = 37$$

$$33 + 37 = 70 \% 10 = 0$$

valid

6) 4 1 2 6 5 4 8 7 8 9 4 5 6

2x)

1 1 1 1 1 1 1

$$2 + 1+2 + 8 + 1+4 + 1+8 + 1+0 = 28$$

$$4 + 2 + 5 + 8 + 8 + 4 + 6 = 37$$

$$28 + 37 = 65 \% 10 \neq 0$$

invalid