

Math 123
 Fall 2017
 Dr. Lily Yen

Quiz 1

Show all your work

Name: _____
 Number: _____
 Signature: _____
 Score: ____/20

Problem 1: Translate the Roman numeral CCLIX into the equivalent Hindu-Arabic numeral.

259

C is 100, L is 50, and IX means 10 – 1.

Score: ____/2

Problem 2: Frequently, Roman numerals are used today in movie credits to specify the date that a movie was released. Translate the date of a movie made in 1964 into Roman notation.

MCMLXIV

M is 1000, CM is 1000 – 100, LX is 50 + 10, and IV means 5 – 1.

Score: ____/3

Problem 3: Write the Babylonian number  in Hindu-Arabic form.


337

Base 60 with 5 60s and 40 – 3 ones: $5 \times 60 + 37$

Score: ____/2

Problem 4: Write the Hindu-Arabic numeral 47 as a Mayan numeral.

•	•
•	•

0	1	2	3	4	5	6	7	8	9
	•	• •	• • •	• • • •	_____	_____•	_____• •	_____• • •	_____• • • •
10	11	12	13	14	15	16	17	18	19
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Score: ____/2

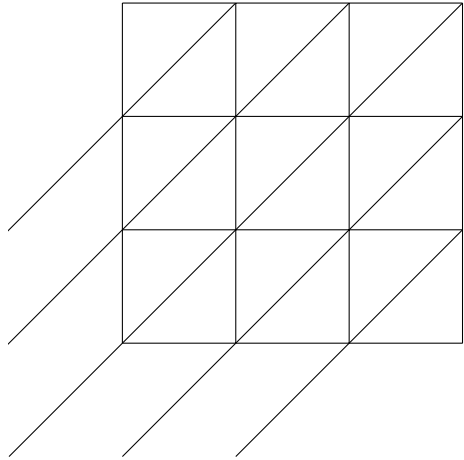
Problem 5: Write the Egyptian numeral  using a Hindu-Arabic numeral.

11613

1	10	100	1000	10 000	100 000	1 000 000
	∩	∩	⊥	∩	∩	∩

Score: ____/2

Problem 6: Multiply 582×736 using the galley method.



428352

Score: /2

73

Problem 7: Convert the numeral 1001001_2 to base 10.

$$2^6 + 2^3 + 2^0 = 64 + 8 + 1 = 73$$

Problem 8: Find the smallest positive integer x such that if x is divided by three, the remainder is 2; if x is divided by five, the remainder is 3; if x is divided by nine, the remainder is 5.

Score: /2

23

If x divided by 9 leaves remainder 5, then x divided by 3 automatically leaves remainder 2 since $5 \equiv 2 \pmod{3}$.

The table shows the first few numbers that leave remainder 5 when divided by 9 as well as their remainder when divided by 5:

candidate for x	5	14	23	32	41	50	59	68	77	86
mod 5	0	4	3	2	1	0	4	3	2	1

The first number that has remainder 3 when divided by 5 is $x = 23$.

Score: /3

Problem 9: In a particular book, one of the characters took an imaginary trip from city A to city B in 62 days. If this character were counting the days of his trip on a 7-hour clock, what would the clock show when he landed assuming that his trip began at 0 o'clock?

$$62 \times 24 \pmod{7} = 4$$

Score: /2