

# MTH 346: NUMBER THEORY

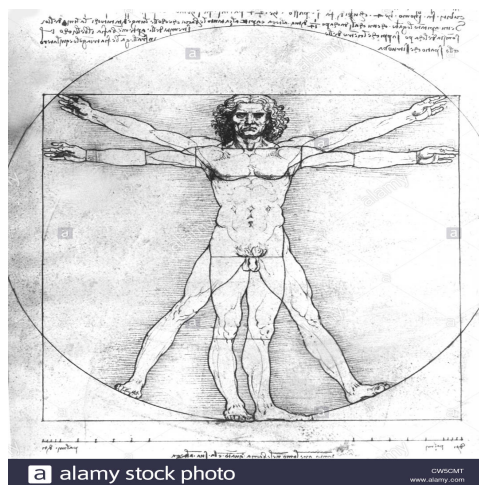
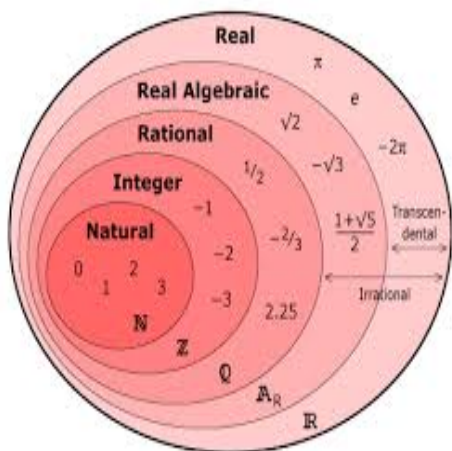
Instructor: J. J. P. Veerman

Term: Summer 2020

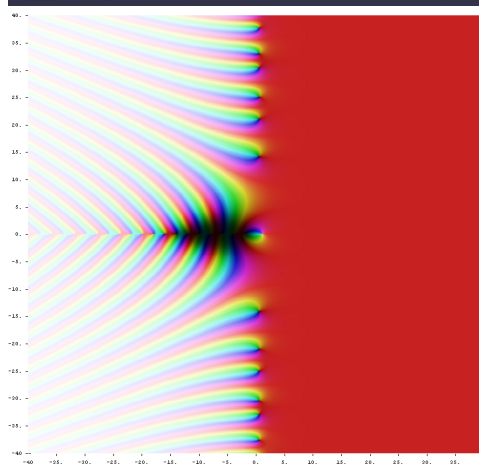
This is a 4-week intensive course in number theory and its applications (4 credits), in the period from July 21 through August 8. This course also serves as a bridge to the language of more advanced mathematics, in that we illustrate basic proof techniques such as mathematical induction

Number theory is one of the oldest branches of mathematics and goes back to antiquity. Today, it has acquired new relevance because of its many applications in areas like cryptography and computer science.

We look at the Euclidean algorithm and its consequences; the unique factorization theorem and different types of primes, such as Mersenne and Fermat primes; rational and irrational numbers; the continued fraction algorithm; and other aspects of number theory.



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Textbooks:

Primary: C. Vanden Eynden, *Elementary Number Theory*, 2nd Edn, Waveland Press, 2006.

For more background: J. J. P. Veerman, *An Introduction to Number Theory*, Lecture Notes. (Free pdf)

Prerequisites: MTH 252 and MTH 261.