

Prepare for the exam by carefully studying this list with reference to your notes, quizzes, activities, readings, and homework.

Arithmetic Properties:

1. Apply the Order of Operations to determine whether a given equality is true, as in HW #9.
2. Verbally explain an arithmetic property asked about by name. (Formulas will not be accepted.)
3. Understand the difference between Identity Properties and the Zero Property of Multiplication.
4. Given a number sentence, give the full name of the property illustrated. Spell correctly.
5. Complete a number sentence to illustrate a specified property. (Check your answer using Order of Operations to be safe!)

Arithmetic Algorithms:

1. Memorize and be able to use the special digits in base twelve and sixteen in arithmetic.
2. Be able to use new digits that I give you in other bases larger than ten (such as thirteen).
3. Describe the steps in using blocks, an abacus, or a place value card to add or subtract a given example in another base; explain trades explicitly.
4. Add entirely base ten or others using the standard or Scratch Addition algorithms.
5. Show the standard algorithm to subtract in base ten or others, including problems like $2000 - 345$.
6. Subtract using MY choice of the standard or Balancing algorithms in base ten or others.
7. Add or subtract measurements in non-base ten units, as in text homework.
8. Find missing addends or subtrahends in other bases, as in text homework.
9. Show the Distributive Property and basic facts only to multiply in base ten. Don't omit steps!
10. Multiply in base ten or others using Lattice, Partial Products and standard Algorithms.
11. Demonstrate standard division in base ten.
12. Use scaffolding or partial quotients to divide in base ten or bases; be able to check your answer.
13. Find missing digits in arithmetic computations, as in text homework.
14. Arrange digits to create greatest or smallest answers, as in text homework.

Number Theory: (Topics will come from this list - further clarification later)

1. State the formal definition of "divides," use it in explanations.
2. Understand and convert between these synonyms: factor, divisor, multiple, divisible, and divides.
3. Identify true/false statements using these synonyms; explain.
4. Especially know how the synonyms pertain to the numbers zero and one.
5. List all whole or natural numbers that are factors or multiples of a given number.
6. State precisely: definition of "prime number," Fundamental Theorem of Arithmetic.
7. Know the meaning of the term "composite"; know that 1 is a unit.
8. Prime factor a given number, ~~including one that already has exponents.~~
9. Be careful not to stop a tree too early; check that final factors *are* prime.
10. Identify correct and incorrect expressions for attempted prime factoring, as in 4-2 HW.
11. ~~Demonstrate the Prime Number Test to tell whether a given example is prime or not.~~

You MUST bring an approved calculator for use on the exam.

(Points off if you have to borrow from me.)