

Remember that it's okay to work in groups, but the answers should be in your own words. Calculators may be helpful; versions of these problems on the exams won't need them. Use complete sentences, staples or paper clips. No late homework accepted.

0. From the textbook: p.365 – 13, p. 367 – 33, p. 25 – 7, 25 These are odd problems and the answers are in the back. For this reason, I will not grade these problems, but they are still part of what you're expected to do, and I will write out solutions for them.

1. p. 365 – 12.

2. p. 365 – 14.

3. p. 365 – 24. (Be sure to review the relevant definitions!)

4. p. 365 – 32.

5. p. 25 – 4.

6. p. 27 – 24.

7. p. 30 – 34.

8 & 9. (A problem using your integer N , not related to the rest of the course material but fun.) You all know the square integers: $0^2 = 0, 1^2 = 1, 2^2 = 4, 3^2 = 9, 4^2 = 16, 5^2 = 25, 6^2 = 36, 7^2 = 49, 8^2 = 64, 9^2 = 81, 10^2 = 100, 11^2 = 121, 12^2 = 144, 13^2 = 169, 14^2 = 196$, etc. There is a famous theorem that says that every positive integer can be written as a sum of four squares. I want you to show this for **your** number N . It's ok to repeat squares and it's ok to use 0's if necessary. For example,

$$105 = 100 + 4 + 1 + 0 = 81 + 16 + 4 + 4 = 64 + 25 + 16 + 0 = 49 + 36 + 16 + 4.$$

One correct solution for this problem is “ $105 = 100+4+1+0$ ”. I'm looking for something similar with your N .