New Concepts

- Points, Lines, Planes
- Collinear, Coplanar
- Intersection
- Space
- Notation of a line

Problem Set #1

"I know quite certainly that I myself have no special talent. Curiosity, obsession and dogged endurance, combined with self-criticism, have brought me to my ideas."

- Albert Einstein

Exercises:

Read pp.1–6

Work the Written Exercises on p.7 #1-25

Problems:

1-1 The 4x4x31 Challenge

Using only four '4's, (4, 4, 4, and 4) with any number of operators and parentheses, you must arrive at the chosen solution. For example, 7 can be created many different ways:

$$7 = \frac{4!}{4} + \frac{4}{4} \qquad 7 = \frac{44}{4} - 4 \qquad 7 = \frac{(\sqrt{4})^4 - \sqrt{4}}{\sqrt{4}}$$

$$7 = \sqrt{4} + 4 + \frac{4}{4} \qquad 7 = \sqrt{4! + 4! + \frac{4}{4}} \qquad 7 = \frac{4}{.\overline{4}} - 4 + \sqrt{4}$$

OK, that's just number 7, what about the rest? The seven basic operations that you should limit yourself to are

- addition, +
- subtraction, –
- multiplication, *
- division, ÷
- exponentiation, x^n
- square roots,
- and factorial, i.e. 4! = 4*3*2*1
- and don't forget the use of decimals and vinculums

1 = _____ 6 = _____

2 = _____ 7 = _____

3 = _____ 8 = _____

4 = _____ 9 = _____

5 = _____ 10 = _____

11 = _____ 21 = _____

12 = _____ 22 = _____

13 = _____ 23 = _____

14 = _____ 24 = _____

15 = _____ 25 = _____

16 = _____ 26 = _____

17 = _____ 27 = _____

18 = _____ 28 = _____

19 = _____ 29 = _____

20 = _____ 30 = _____

31 = _____