

MATH 1030-006
First Midterm

Name: _____ ID: U _____

Question:	1	2	3	4	5	Total
Points:	20	20	20	20	20	100
Score:						

1. (20 points) If necessary, put the following statements in the form '*If p, then q*'. Is it an *Inductive* or *Deductive* argument? If *Deductive*, then draw the Venn-diagram and check the *Validity* of the argument. Also, check if it is *Sound*.

Premise: It's *necessary* for nurses to know CPR.

Premise: Tom is a nurse.

Conclusion: Tom knows CPR.

2. (20 points) Operating at full capacity a **Nuclear Power Plant** can generate 1190 megawatts of *power*. Nuclear fission of 1 kilogram of uranium releases 16 million kilowatt-hours of energy. How much energy, in kilowatt-hours, can the plant generate each month [**Hint:** Your answer should be in '*Scientific Notation*']? How much uranium, in kilograms, is needed by this power plant each month? If a typical home uses 1000 kilowatt-hours of energy per month, how many homes can this power plant supply with energy each month?

3. (20 points) Jordan and Amari run a 200 meter race, and Jordan wins by 10 meters. They decided to run the 200 meter race again with Jordan 10 meters behind the starting line.
- (a). Assume both runners run at the same pace as they did in the first race, who wins the second race?
- (b). Suppose that Jordan starts 5 meters behind the starting line in the second race. Who wins the race?.
4. (20 points) Eileen has earned \$45 in annual interest from a saving account with a 3.5% annual interest rate. Assuming she made no deposits or withdrawals during the year, what is the balance in her account now after she earned this \$45 interest?

5. (20 points) Suppose you are a teacher. Your first-period class, with 25 students, had an *average score* of 86% on the midterm exam. Your second-period class, with 30 students, had an *average score* of 84% on the same exam. Does it follow that the *average score* for both classes combined is 85%? Explain.