

141 EXAM IB — OCTOBER 2, 2000

NAME: _____

INSTRUCTIONS:

Show all your work. Answers alone will receive little or no credit. Be neat and careful with your calculations. A mistake early on could be costly. Don't forget to write in English sentences. You may include mathematical notation but it should read as an English sentence. Give your reasons. This is a course in quantitative reasoning. It is your reasoning which you must demonstrate.

SCORES

1. _____

2. _____

3. _____

4. _____

5. _____

TOTAL _____

1. (20 p'ts.) An electric company charges their customers a monthly connection fee of \$6 per month in addition to the charge per kilowatt-hour used. A bill for May was

May 800 KWH \$95.60

If in June a customer uses 760 KWH, for how much will this customer be billed? **Give your answers in dollars.**

Ans. _____

2. (20 p'ts.) A watt is .737 foot pounds per second. Suppose I climb 3 flights of stairs in 1 minute and 38 seconds, weigh 180 pounds and that a flight of stairs is 12 feet high. At what rate (in watts) do I work?

Ans. _____

3. (20 p'ts.) I filled my gas tank with 10.4 gallons of gas at the first of the week. The odometer read 35,386 miles at this time. Later in the week, I filled it again and the odometer read 35,652 miles. I calculated that I was getting 28 miles per gallon. How many gallons did I put in on the second filling?

Ans. _____

4. (20 p'ts.) A bicycle racer's speed is determined by timing him over 100 yards. If he is peddling at the rate of 23 miles per hour, what is his time for 100 yards? **Give your answer in seconds.**

Ans. _____

5. (20 p'ts.) Jim notices that a 10 once box of cereal costs \$2.30 and that a 16 once box of the same cereal costs \$3.20. Jim also has a coupon good only on a 10 once box of this brand of cereal. In calculating which would be the better buy, a 16 once box for \$3.20 or a 10 once box with the coupon, Jim finds that he would be paying the same amount per ounce and so neither is better than the other. What is the value of the coupon?

Ans. _____