

YOUR NAME: _____

George Voutsadakis

Read each problem **very carefully** before starting to solve it. Each problem is worth 5 points. It is necessary to show **all** your work. Correct answers without explanations are worth 0 points. GOOD LUCK!!

1. Evaluate the formula $\frac{1}{1 + \frac{1}{x}}$, when $x = 0.7$.

2. Evaluate the expression $\left(7 + \frac{1}{e}\right)^{\frac{5}{2+\pi}}$

3. When two resistances R_1 and R_2 are connected in parallel, the net resistance $f(R_1, R_2)$ of the resulting circuit is given by the formula

$$f(R_1, R_2) = \frac{R_1 R_2}{R_1 + R_2},$$

the unit being the Ohm (Ω).

(a) Use **functional notation** to express the net resistance of a circuit consisting of a 1.8Ω connected in parallel with a resistance of 2.3Ω and calculate its value.

(b) Describe succinctly the exact meaning of $f(4, 2)$.