LIST OF ALL THE PROOFS

After Midterm

0.1 Proving E(cX) = c E(X)

0.2 Proving Alternative form of Var(X)

$$Var(X) = E[(X - \mu)]^2$$

$$E[(X^2 - 2\mu X + \mu^2)]$$
$$= E(X^2) - 2\mu E(X) + \mu^2$$
$$= E(X^2) - 2\mu^2 + \mu^2 \qquad \text{E(X) evaluated}$$
$$= E(X^2) - \mu^2 \qquad \qquad \square$$