No graphing calculators are allowed on this quiz. Please read each question carefully, follow directions and clearly mark your solutions. **Show your work for full credit.**

Revenue function:	$R(x) = p * x$
Profit function:	$P(x) = R(x) - C(x)$
Elasticity of demand:	$E(p) = -\dfrac{p \cdot q'(p)}{q(p)}$
Future value of an investment:	$B(t) = P(1 + \frac{r}{k})^{kt}$ $B(t) = Pe^{rt}$
Effective interest:	$r_e = (1 + \frac{r}{k})^k - 1$ $r_e = e^r - 1$

1. Suppose the demand q and the price p for a certain commodity are related by

$$q(p) = 240 - 2p, \text{ for } 0 \le p \le 120.$$

   Find and interpret the elasticity of demand when the price is $p = 70$.

2. Joanna's bakery makes sourdough bread. They can bake the breads at a cost of $2 per loaf. The bread has been selling for $5 per loaf, and at this price, they sell 50 loafs per day. The bakery plans to raise the price of the sourdough bread and expects that for each $1 increase in price, 6 fewer loafs will be sold each day. What price should Joanna's bakery charge per loaf of sourdough to maximize profit?