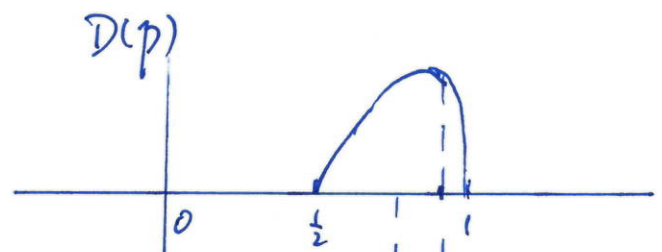
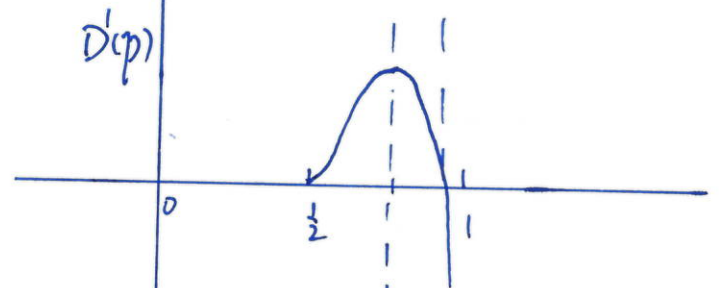


(d)

$$D(p) = H(p) - 1 + 4(p - \frac{1}{2})^2$$



$$D'(p) = \log(1-p) - \log p + 8(p - \frac{1}{2})$$



$$D''(p) = 8 - \frac{\log e}{p(1-p)}$$

$$\text{Let } D''(p) = 0$$

$$\log e = 8p(1-p)$$

$$\Rightarrow p = \frac{1}{2} \pm 0.26$$

