(a) as done in class

\[ \text{Ans: } \frac{0.5}{\sqrt{0.68}} \sqrt{0.4} = \text{ work out} \]

(b) 

\[ x = 2 \text{ points} \]

Mark the maximum and minimum first

Then make the mean:

Make sure points are on the correct quadran.

\[ X \sim \text{Normal, mean}=0, \ SD=0.05 \quad Y \sim \text{Normal,} \ \ \ \ \text{optimal A: } P (10X > 11) \]

\[ \text{optimal B: } P (5X + 5Y > 11) \]

\[ E(10X) = 10, \ E(5X + 5Y) = 10 \]

\[ SD(10X) = 0.05, \ SD(5X + 5Y) = \sqrt{25 \cdot 0.05^2 + 25 \cdot 0.05} = \sqrt{25 \cdot 0.5 \cdot 0.05} \]

\[ P (10X > 11) = P (Z > \frac{11 - 10}{0.5}) = P (Z > 2) \]

\[ P (5X + 5Y > 11) = P (Z > \frac{11 - 10}{\sqrt{0.25}}) = P (Z > 2.828) \]

Option B has smaller risk, so is better.