

Q2 We have to consider 4 cases

① $x \in (-\infty, -200)$

② $x \in [-200, 0)$

③ $x \in [0, 1000)$

④ $x \in [+1000, \infty)$

for case ① $F_x = P(\{X \leq x\}) = 0$

② $F_x = P(\{X \leq x\}) = P(\{X = -200\}) = \frac{1}{2}$

③ $F_x = P(\{X \leq x\}) = \frac{1}{2} + \frac{1}{2} \cdot \frac{x}{1000}$

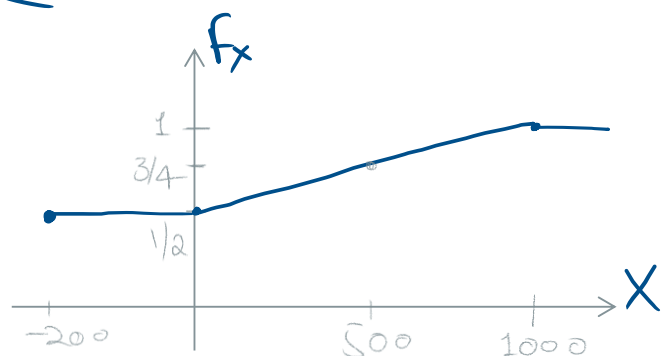
Since either you guess incorrectly or you get a number $< x$ in the wheel.

Finally for case $x > 1000$, $F_x = 1$

Since always $x \leq 1000$

Graph of $F_x =$

$P(X \leq 500) = \boxed{\frac{3}{4}}$



Assignment 2