In this part, I have tried 3 different payout function: the first one is v(x)=1 for all x; the second one is v(x) = 1 only for |x| < 0.2 and v(x) = 0 otherwise and the third one is v(x)=exp(0.3x).

When t is close to zero, all curves have a smooth "bell curve" shape, which is the middle has a relatively high f-value while the value of f at the point close to ±1 is nearly zero.

When t is close to T, all curves has more points reaching f=1 than the condition when t is small, but the shape of curve around ±1 is steep, indicating the value of the points near ±1 is still close to 0.