1 Ex1

1.1 1.

The probability is p^n. And the CPU ultilization is $1 - p^n$.

1.2 2.

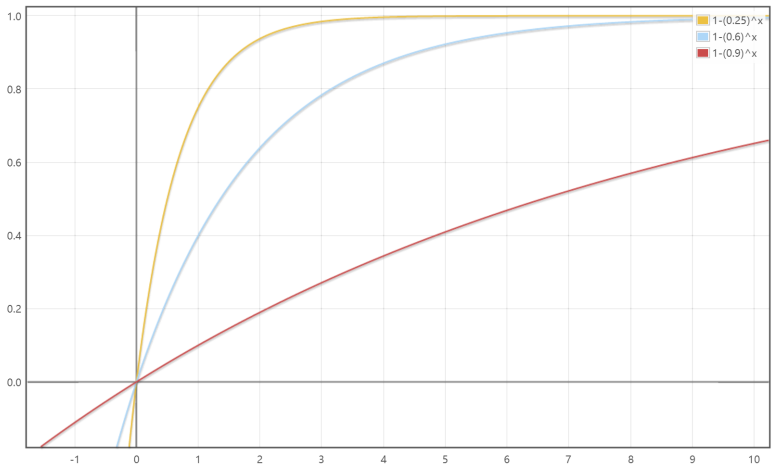

Figure 1: plot of functions

1.3 3.

1. $(256 - 96)/48 = 3$
2. $1 - 0.9^3 = 0.27$
3. 512MB :$(512 - 96)/48 = 8; (1 - 0.9^8)$
   768MB:14;$(1 - 0.9^{14})$
   1280MB:24;$(1 - 0.9^{24})$

The third is the best.The improvement of utilization is the highest.

2 Ex2

1. /usr/src/servers/is/dmp.c
   Add a struct to $hooks[]$;

```
struct hook_entry {
  int key;
  void (*function)(void);
  char *name;
} hooks[] = {
  { SF7,  pscount_dmp, "New: Count how many processes" }
};
```

Figure 2: dmp.c

2. /usr/src/servers/is/dmp_kernel.c
   The function output the num of process.

```
void pscount_dmp()
{
  struct mproc *mp;
  int i,n=0;
  if(getsysinfo(PM_PROC_NR, SI_PROC_TAB, mproc, sizeof(mproc))!=OK){
    printf("Error\n");
    return;
  }
  for(i=0;i<NR_PROCS;i++){
    mp=&mproc[i];
    if(mp->mp_pid==0 && i!=PM_PROC_NR) continue;
    n++;
  }

  printf("Number of running processes: %d\n",n);
}
```

Figure 3: dmp_kernel.c

3. /usr/src/servers/is/proto.h
   Write the declaration of pscount_dmp() in dmp_kernel.