Matlab output

Problem 1

When executing code parallelly for N=8 with 4 cores

```
clear all;

% Create a parallel pool if none exists
if isempty(gcp())
    parpool();
end

% Parallel computations
n = 8;
p = feature('numcores');

tic
parfor i=1:n
    timeconsumingfun(5)
end
tp = toc;

t1 = getT1();

speedup = getSpeedup(t1, tp);
efficiency = getEfficiency(speedup, p);

fprintf("\nt1: %d and tp: %d", t1, tp)
fprintf("\nfor n: %d, speedup is %f and efficiency is %f\n", n, speedup, efficiency)
```

Output:

```
>> main_p

t1: 4.000630e+01 and tp: 1.058116e+01
for n: 8, speedup is 3.780901 and efficiency is 94.522522
```

For different ‘N’

```
clear all;

% Create a parallel pool if none exists
```

```
if isempty(gcp())
    parpool();
end

% Parallel computations
n1 = 8;
n2 = 54;
n3 = 400;

p = feature('numcores');


tic
parfor i=1:n1
    timeconsumingfun(5)
end
tp1 = toc;


tic
parfor i=1:n2
    timeconsumingfun(5)
end
tp2 = toc;


tic
parfor i=1:n3
    timeconsumingfun(5)
end
tp3 = toc;


speedup_1 = getSpeedup(n1*5, tp1);
speedup_2 = getSpeedup(n2*5, tp2);
speedup_3 = getSpeedup(n3*5, tp3);

efficiency_1 = getEfficiency(speedup_1, p);
efficiency_2 = getEfficiency(speedup_2, p);
efficiency_3 = getEfficiency(speedup_3, p);

fprintf("\nfor n: %d, speedup is %f and efficiency is %f", n1, speedup_1, efficiency_1)
fprintf("\nfor n: %d, speedup is %f and efficiency is %f", n2, speedup_2, efficiency_2)
fprintf("\nfor n: %d, speedup is %f and efficiency is %f\n", n3, speedup_3, efficiency_3)
```

Output:

```
>> main_parallel
Starting parallel pool (parpool) using the 'Processes' profile ...
Connected to the parallel pool (number of workers: 4).

for n: 8, speedup is 3.765698 and efficiency is 94.142442
for n: 54, speedup is 3.849204 and efficiency is 96.230098
for n: 400, speedup is 3.997968 and efficiency is 99.949207
```