```
# Problem 1
list1 = [item for item in range(2000,3200) if item%7==0 and item%5!=0]

print("Total Number of elements = {}".format(len(list1)))
print()

rowNum=0
for i in range(0,round(len(list1)/10)):
  a = ''
  for j in range(0,10):
    if j+(rowNum*10) < len(list1):
      a += str(j+(rowNum*10)) + ' . ' + str(list1[j+(rowNum*10)]) + ', '
  print(a)
  rowNum+=1
```

```
Total Number of elements = 138

0 . 2002, 1 . 2009, 2 . 2016, 3 . 2023, 4 . 2037, 5 . 2044, 6 . 2051, 7 . 2058, 8 . 2072, 9 . 2079,
10 . 2086, 11 . 2093, 12 . 2107, 13 . 2114, 14 . 2121, 15 . 2128, 16 . 2142, 17 . 2149, 18 . 2156, 19 . 2163,
20 . 2177, 21 . 2184, 22 . 2191, 23 . 2198, 24 . 2212, 25 . 2219, 26 . 2226, 27 . 2233, 28 . 2247, 29 . 2254,
30 . 2261, 31 . 2268, 32 . 2282, 33 . 2289, 34 . 2296, 35 . 2303, 36 . 2317, 37 . 2324, 38 . 2331, 39 . 2338,
40 . 2352, 41 . 2359, 42 . 2366, 43 . 2373, 44 . 2387, 45 . 2394, 46 . 2401, 47 . 2408, 48 . 2422, 49 . 2429,
50 . 2436, 51 . 2443, 52 . 2457, 53 . 2464, 54 . 2471, 55 . 2478, 56 . 2492, 57 . 2499, 58 . 2506, 59 . 2513,
60 . 2527, 61 . 2534, 62 . 2541, 63 . 2548, 64 . 2562, 65 . 2569, 66 . 2576, 67 . 2583, 68 . 2597, 69 . 2604,
70 . 2611, 71 . 2618, 72 . 2632, 73 . 2639, 74 . 2646, 75 . 2653, 76 . 2667, 77 . 2674, 78 . 2681, 79 . 2688,
80 . 2702, 81 . 2709, 82 . 2716, 83 . 2723, 84 . 2737, 85 . 2744, 86 . 2751, 87 . 2758, 88 . 2772, 89 . 2779,
90 . 2786, 91 . 2793, 92 . 2807, 93 . 2814, 94 . 2821, 95 . 2828, 96 . 2842, 97 . 2849, 98 . 2856, 99 . 2863,
100 . 2877, 101 . 2884, 102 . 2891, 103 . 2898, 104 . 2912, 105 . 2919, 106 . 2926, 107 . 2933, 108 . 2947, 109 . 2954,
110 . 2961, 111 . 2968, 112 . 2982, 113 . 2989, 114 . 2996, 115 . 3003, 116 . 3017, 117 . 3024, 118 . 3031, 119 . 3038,
120 . 3052, 121 . 3059, 122 . 3066, 123 . 3073, 124 . 3087, 125 . 3094, 126 . 3101, 127 . 3108, 128 . 3122, 129 . 3129,
130 . 3136, 131 . 3143, 132 . 3157, 133 . 3164, 134 . 3171, 135 . 3178, 136 . 3192, 137 . 3199,
```

```
# Problem 2
t = (2,4,6,8,10)

list2 = list(t)
list2[1] = 40
list2.append(12)

t = tuple(list2)
print('t =',t)
```

```
t = (2, 40, 6, 8, 10, 12)
```

```
# Problem 3
n = 8
dict1 = {}
for k in range(1,n+1):
  dict1[k] = k*k

print(dict1)
```

```
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64}
```

```
# Problem 4
import numpy as np

x=5+8j
y=-6+7j

u = x+y
print('Real = {:.6f},    Imaginary = {:.6f}'.format(u.real, u.imag))
v=x*y
print('Real = {:.6f},   Imaginary = {:.6f}'.format(v.real, v.imag))
w=x/y
print('Real = {:.6f},     Imaginary = {:.6f}'.format(w.real, w.imag))
z=np.exp(x)
print('Real = {:.6f},   Imaginary = {:.6f}'.format(z.real, z.imag))
r=np.sqrt(y)
print('Real = {:.6f},     Imaginary = {:.6f}'.format(r.real, r.imag))
s=x*(y**2)
print('Real = {:.6f},   Imaginary = {:.6f}'.format(s.real, s.imag))
```

```
Real = -1.000000,    Imaginary = 15.000000
Real = -86.000000,   Imaginary = -13.000000
Real = 0.305882,     Imaginary = -0.976471
Real = -21.594120,   Imaginary = 146.833783
Real = 1.268768,     Imaginary = 2.758582
Real = 607.000000,   Imaginary = -524.000000
```

✓ 0s completed at 2:04 PM