

In [9]:

```
#!/usr/bin/env python3
# -*- coding: utf-8 -*-
"""
Created on Sat Sep  7 14:54:06 2019

@author: frank
"""
import pandas as pd
import pymongo
import matplotlib.pyplot as plt

import numpy as np
import seaborn as sns
connection = pymongo.MongoClient('localhost',27017)
database = connection['db_mega']
collection = database['coll_mega']
#db = connection.testemega # outra forma para conexão no banco
print("Database connected")
data = database.coll_mega
testemegaList = data.find()

df = pd.DataFrame(list(data.find()))

deze = []
d1 = df["1_Dezena"][0:2179]
for a in d1:
    deze.append(int(a))
    #print(num)
print(deze)
10, 11, 43, 42, 35, 27, 37, 31, 60, 22, 42, 43, 3, 56, 14, 19, 58,
32, 29, 1, 20, 14, 10, 13, 30, 60, 8, 15, 25, 4, 32, 57, 23, 11, 5
7, 21, 34, 44, 51, 17, 4, 4, 15, 33, 28, 45, 24, 23, 32, 53, 3, 17,
53, 44, 58, 28, 16, 9, 11, 43, 36, 51, 34, 54, 40, 47, 42, 56, 8, 6
0, 16, 14, 51, 17, 42, 11, 17, 31, 46, 22, 42, 19, 32, 31, 27, 36,
54, 57, 29, 52, 17, 18, 57, 59, 53, 4, 13, 37, 29, 51, 43, 42, 21,
22, 13, 50, 44, 50, 34, 9, 15, 1, 56, 37, 2, 31, 21, 4, 58, 4, 32,
52, 17, 32, 4, 35, 9, 19, 42, 53, 49, 26, 30, 33, 20, 33, 23, 38, 4
3, 17, 35, 41, 53, 51, 52, 40, 36, 32, 16, 46, 17, 2, 25, 25, 7, 5,
22, 35, 6, 25, 11, 5, 47, 16, 44, 59, 33, 22, 44, 48, 49, 54, 55,
8, 35, 46, 50, 13, 57, 34, 16, 2, 37, 42, 36, 1, 18, 30, 56, 57, 4,
33, 53, 45, 33, 28, 17, 42, 28, 35, 8, 12, 38, 46, 4, 32, 47, 48, 3
8, 29, 8, 6, 26, 44, 4, 21, 18, 28, 44, 49, 15, 3, 10, 45, 6, 48, 4
9, 7, 34, 2, 30, 47, 7, 60, 49, 11, 31, 55, 29, 19, 42, 31, 45, 28,
52, 10, 20, 54, 17, 57, 49, 57, 39, 20, 51, 27, 56, 51, 52, 44, 12,
25, 25, 58, 31, 57, 1, 57, 34, 60, 57, 8, 15, 41, 27, 38, 15, 20, 3
7, 1, 9, 55, 49, 28, 7, 10, 14, 44, 28, 41, 5, 19, 44, 3, 53, 32, 1
1, 3, 36, 56, 9, 4, 20, 20, 39, 45, 36, 24, 37, 24, 27, 40, 27, 10,
27, 3, 21, 30, 55, 41, 7, 46, 41, 3, 43, 4, 36, 60, 11, 26, 4, 4, 4
7, 16, 44, 17, 27, 55, 44, 50, 18, 49, 19, 49, 7, 59, 24, 60, 47, 2
```

In [10]:

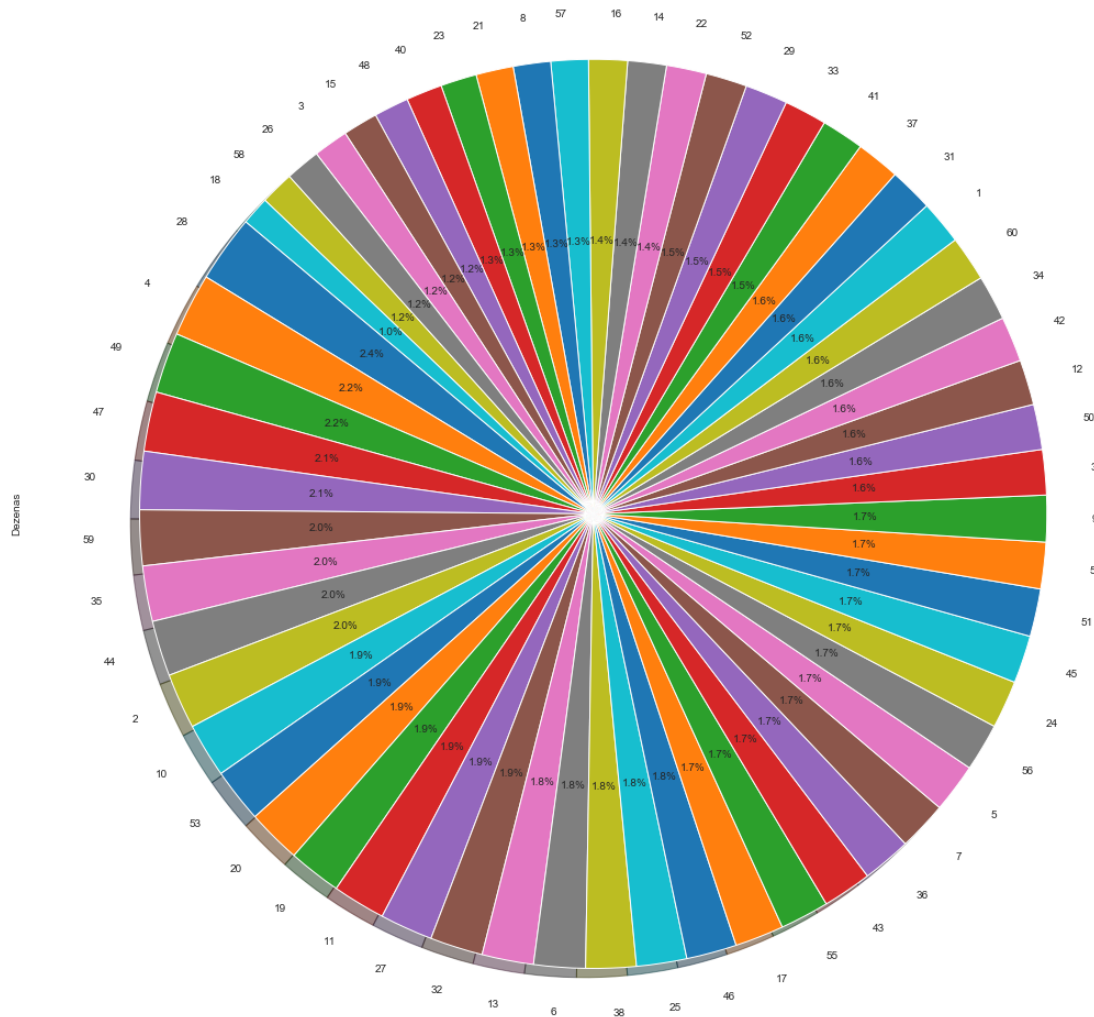
```
df = pd.DataFrame({'Dezenas': deze})
```

In [18]:

```
df['Dezenas'].value_counts().plot.pie(  
    autopct='%1.1f%%', shadow=True, startangle=140, figsize=(45, 19))
```

Out[18]:

<matplotlib.axes.\_subplots.AxesSubplot at 0x7f8a44a3d9d0>



In [13]:

```
plt.figure(figsize=(6,4))  
sns.heatmap(df.corr(),cmap='Blues',annot=False)
```

Out[13]:

<matplotlib.axes.\_subplots.AxesSubplot at 0x7f8a44ae20d0>

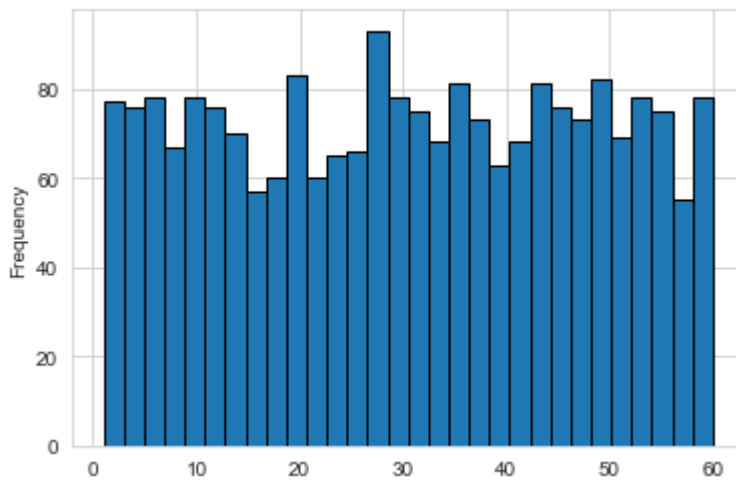


In [20]:

```
df["Dezenas"].plot.hist(bins=30, edgecolor='black')
```

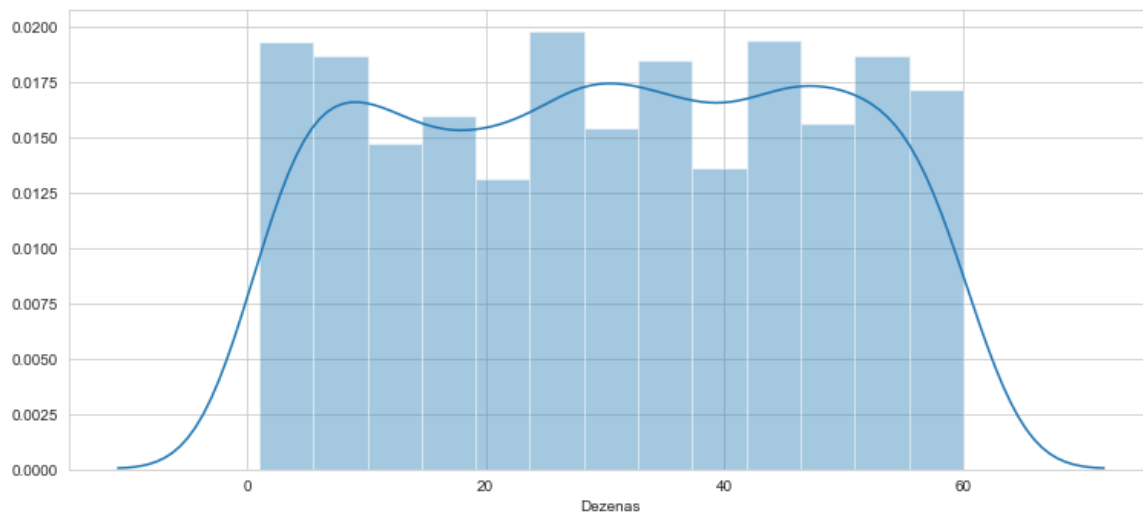
Out[20]:

<matplotlib.axes.\_subplots.AxesSubplot at 0x7f8a44a01e50>



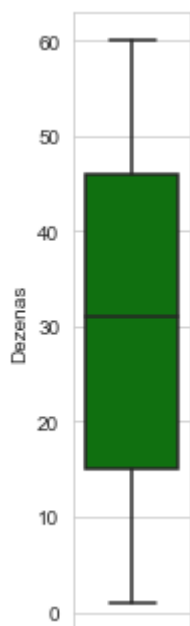
In [19]:

```
plt.figure(figsize=(15*number_of_columns,6*number_of_rows))
for i in range(0,len(l)):
    plt.subplot(number_of_rows + 1,number_of_columns,i+1)
    sns.distplot(df[l[i]],kde=True)
```



In [14]:

```
l = df.columns.values
number_of_columns=12
number_of_rows = len(l)-1/number_of_columns
plt.figure(figsize=(number_of_columns,5*number_of_rows))
for i in range(0,len(l)):
    plt.subplot(number_of_rows + 1,number_of_columns,i+1)
    sns.set_style('whitegrid')
    sns.boxplot(df[l[i]],color='green',orient='v')
    plt.tight_layout()
```

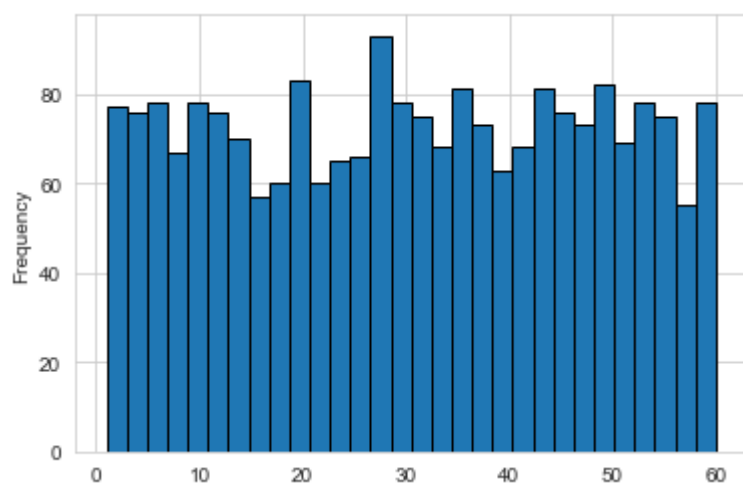


In [15]:

```
df["Dezenas"].plot.hist(bins=30, edgecolor='black')
```

Out[15]:

<matplotlib.axes.\_subplots.AxesSubplot at 0x7f8a44ae2050>



In [16]:

```
df.describe()
```

Out[16]:

	Dezenas
count	2179.000000
mean	30.536485
std	17.334232
min	1.000000
25%	15.000000
50%	31.000000
75%	46.000000
max	60.000000

In [17]:

```

axdez1 = df['Dezenas'].value_counts().plot.bar(figsize=(20, 10), color='#86bf91', z
# Despine
axdez1.spines['right'].set_visible(False)
axdez1.spines['top'].set_visible(False)
axdez1.spines['left'].set_visible(False)
axdez1.spines['bottom'].set_visible(False)

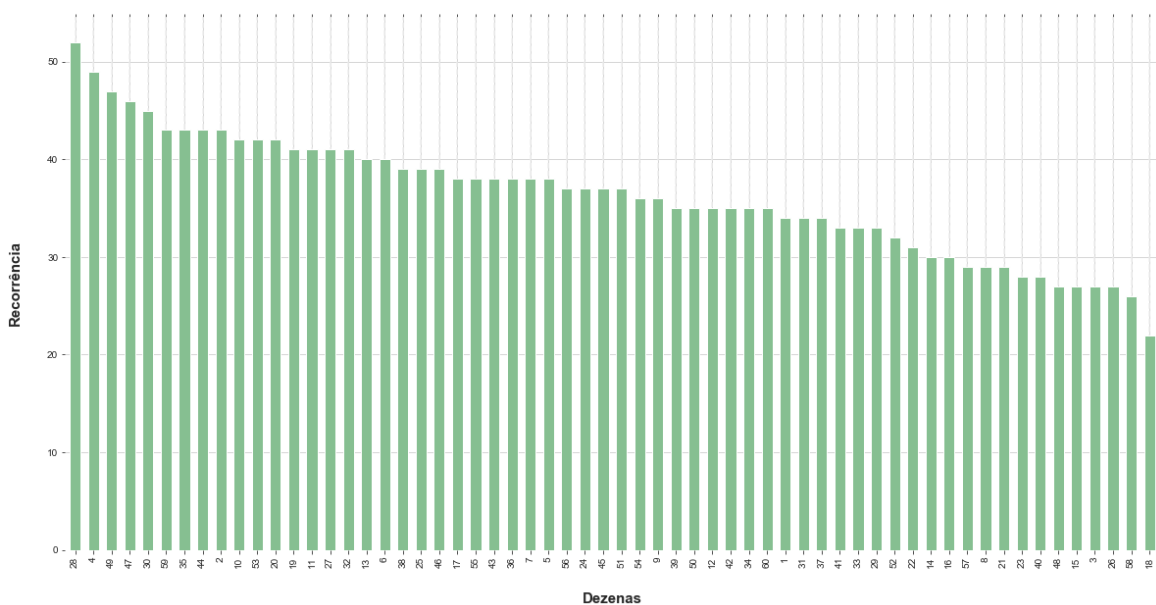
# Switch off ticks
axdez1.tick_params(axis="both", which="both", bottom="off", top="off", labelbottom=

# Draw vertical axis lines
vals = axdez1.get_xticks()
for tick in vals:
    axdez1.axvline(x=tick, linestyle='dashed', alpha=2, color='#eeeeee', zorder=4)

# Set x-axis label
axdez1.set_xlabel("Dezenas", labelpad=25, weight='bold', size=15)

# Set y-axis label
axdez1.set_ylabel("Recorrência", labelpad=25, weight='bold', size=15)

```



In [ ]: