In [11]:

```python
from sympy import Symbol,pprint,init_printing
def print_series(n):
    init_printing(order='rev-lex')
    x=Symbol('x')
    series=x
    for i in range(2,n+1):
        series=series+((-1)**n)*(x**(2*n+1))/2*n+1
    pprint(series)

if __name__=='__main__':
    n=input('Enter the number of terms you want in the series: ')
    print_series(int(n))
```

```
Enter the number of terms you want in the series: 10
            21
9 + x + 45·x
```

In [7]:

```python
def mysin(x, order):
    a = x
    s = a
    for i in range(1, order):
        a *= -1 * x**2 / ((2 * i) * (2 * i + 1))
        s += a
    return s

import numpy as np
vmysin = np.vectorize(mysin, excluded=['order'])

x = np.linspace(-80, 80, 500)
y2 = vmysin(x, 2)
y10 = vmysin(x, 10)
y100 = vmysin(x, 100)
y1000 = vmysin(x, 1000)
y = np.sin(x)

import matplotlib.pyplot as plt
plt.plot(x, y, label='sin(x)')
plt.plot(x, y2, label='order 2')
plt.plot(x, y10, label='order 10')
plt.plot(x, y100, label='order 100')
plt.plot(x, y1000, label='order 1000')
plt.ylim([-3, 3])
plt.legend()
plt.show()
```
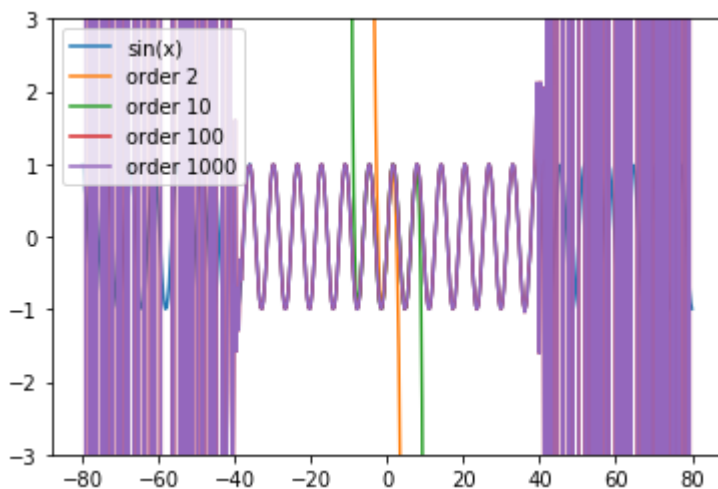
In [9]:

```python
from sympy import Symbol,pprint,init_printing
def print_series(n):
    init_printing(order='rev-lex')
    x=Symbol('x')
    series=1
    for i in range(2,n+1):
        series=series+(1/n)
    pprint(series)

if __name__=='__main__':
    n=input('Enter the number of terms you want in the series: ')
    print_series(int(n))
```

```
Enter the number of terms you want in the series: 7
1.8571428571428568
```
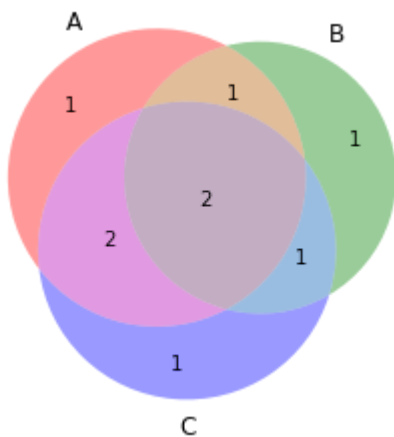
In [16]:

```python
from matplotlib_venn import venn3
import matplotlib.pyplot as plt
from sympy import FiniteSet
def draw_venn(sets):
    venn3(subsets=sets)
    plt.show()


if __name__=='__main__':
    s1=FiniteSet(3,6,7,8,9,2)
    s2=FiniteSet(1,3,4,7,8)
    s3=FiniteSet(1,3,5,6,8,9)
    draw_venn([s1,s2,s3])
```


In [ ]:

In [ ]: