In [ ]:
```
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```

In [26]:
```
#Equation
import sympy as sym
from sympy import symbols
q1, q2, r, k = symbols('q1 q2 r k')
F = k*q1*q2/r**2
F
```

Out[26]:
$$\frac{kq_1q_2}{r^2}$$

In [27]:
```
# data and table
import pandas as pd
data = {
    'Charge one':[3,3,3,3,3,3,3,3],
    'Charge two':[6,6,6,6,6,6,6,6],
    'Distance':[0.03,0.04,0.05,0.06,0.07,0.08,0.09,0.1],
    'Distance_square':[0.03**2,0.04**2,0.05**2,0.06**2,0.07**2,0.08**2,0.09**2,0.1**2]
}

df=pd.DataFrame(data)
df
```

Out[27]:

	Charge one	Charge two	Distance	Distance_square
0	3	6	0.03	0.0009
1	3	6	0.04	0.0016
2	3	6	0.05	0.0025
3	3	6	0.06	0.0036
4	3	6	0.07	0.0049
5	3	6	0.08	0.0064
6	3	6	0.09	0.0081
7	3	6	0.10	0.0100

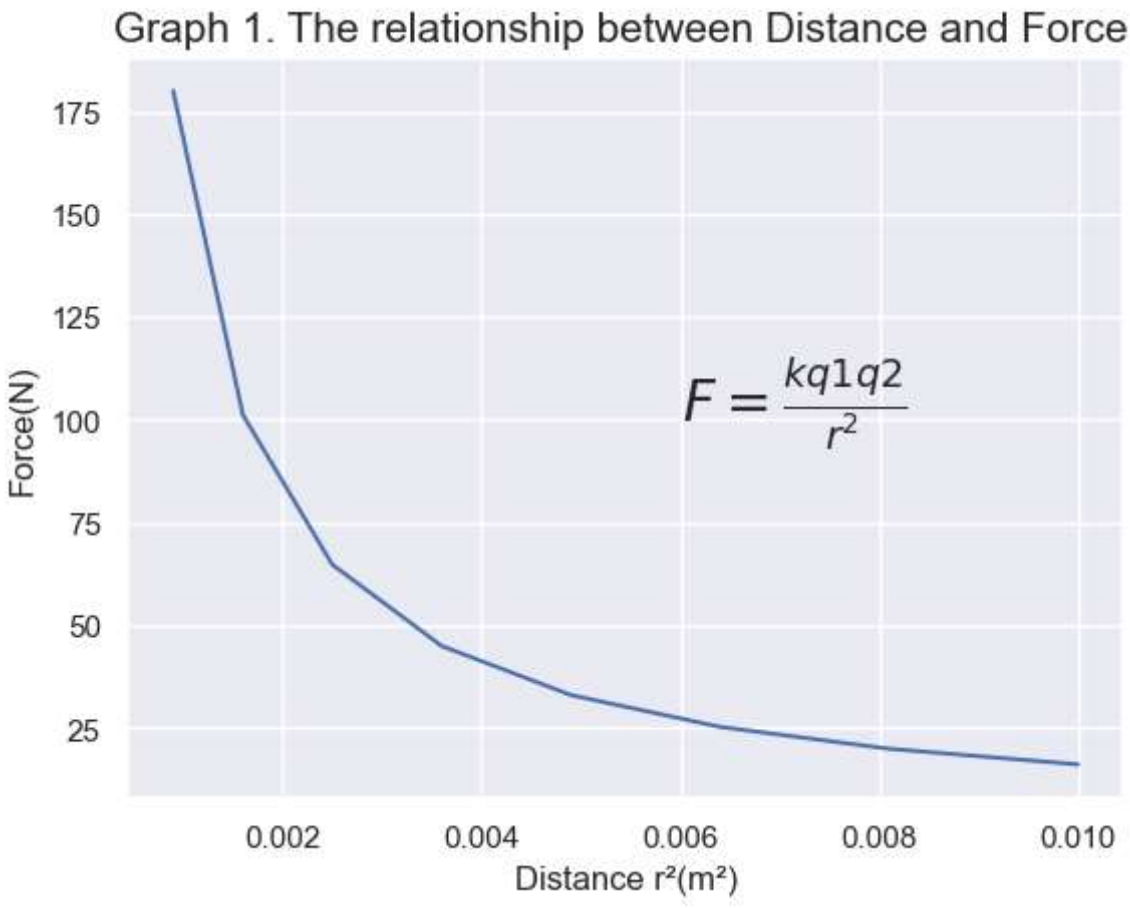
In [28]:
```
# Add a new column
import pandas as pd
def Force(q1, q2, r, k=9 * 10**9):
    F= k * q1 *10**-6* q2*10**-6/(r**2)
    return F

df['Force']=Force(df['Charge one'],df['Charge two'],df['Distance'])
df=pd.DataFrame(df)
df
```

Out[28]:

	Charge one	Charge two	Distance	Distance_square	Force
0	3	6	0.03	0.0009	180.000000
1	3	6	0.04	0.0016	101.250000
2	3	6	0.05	0.0025	64.800000
3	3	6	0.06	0.0036	45.000000
4	3	6	0.07	0.0049	33.061224
5	3	6	0.08	0.0064	25.312500
6	3	6	0.09	0.0081	20.000000
7	3	6	0.10	0.0100	16.200000

In [29]:

```
#Graph
import matplotlib.pyplot as plt
import seaborn as sns
x=df.Distance_square
y=df.Force
plt.plot(x,y,color="b")
plt.xlabel("Distance r²(m²)")
plt.ylabel("Force(N)")
plt.title("Graph 1. The relationship between Distance and Force ",fontsize=15)
plt.text(0.006,100,'$F=\\frac{k q1 q2}{r^2}$',fontsize=20)
sns.set()
plt.show()
```



In [30]:
```
# New Code
import pandas as pd

properties = {"background-color": "lightblue", "color": "white", "text-align": "center
              "border": "2px solid black", "width": "80px"}
styled_df = df.style.format(precision=4).set_properties(**properties)
styled_df
```

Out[30]:

	Charge one	Charge two	Distance	Distance_square	Force
0	3	6	0.0300	0.0009	180.0000
1	3	6	0.0400	0.0016	101.2500
2	3	6	0.0500	0.0025	64.8000
3	3	6	0.0600	0.0036	45.0000
4	3	6	0.0700	0.0049	33.0612
5	3	6	0.0800	0.0064	25.3125
6	3	6	0.0900	0.0081	20.0000
7	3	6	0.1000	0.0100	16.2000

In [ ]: