Assignment 1

Question: 1

```python
import pandas as pd

def proportion_of_education():

    df = pd.read_csv("assets/NISPUF17.csv")

    education_levels = df['EDUC1']

    education_counts = education_levels.value_counts()

    total_children = len(education_levels)

    proportion_less_than_hs = education_counts[1] / total_children
    proportion_hs = education_counts[2] / total_children
    proportion_more_than_hs = education_counts[3] / total_children
    proportion_college = education_counts[4] / total_children

    proportions_dict = {
    "less than high school": proportion_less_than_hs,
    "high school": proportion_hs,
    "more than high school but not college": proportion_more_than_hs,
    "college": proportion_college
    }

    return proportions_dict

result = proportion_of_education()
print(result)
```

Question: 2

```python
def average_influenza_doses():
```

```python
    df = pd.read_csv("assets/NISPUF17.csv")

    breastmilk_data = df[df['CBF_01'] == 1]
    no_breastmilk_data = df[df['CBF_01'] == 2]


    avg_influenza_breastmilk = breastmilk_data['P_NUMFLU'].mean()
    avg_influenza_no_breastmilk = no_breastmilk_data['P_NUMFLU'].mean()

    return (avg_influenza_breastmilk, avg_influenza_no_breastmilk)

result = average_influenza_doses()
print(result)
```

Question: 3

```python
import pandas as pd

def chickenpox_by_sex():

    df = pd.read_csv("assets/NISPUF17.csv")


    vaccinated_data = df[df['VARVRCN'] >= 1]


    vaccinated_with_chickenpox = vaccinated_data[vaccinated_data['HAD_CPOX'] == 1]['SEX'].value_counts()


    vaccinated_without_chickenpox = vaccinated_data[vaccinated_data['HAD_CPOX'] ==
2]['SEX'].value_counts()


    ratio_male = vaccinated_with_chickenpox.get(1, 0) / vaccinated_without_chickenpox.get(1, 1)
    ratio_female = vaccinated_with_chickenpox.get(2, 0) / vaccinated_without_chickenpox.get(2, 1)
```

```
    result_dict = {
        "male": ratio_male,
        "female": ratio_female
    }

    return result_dict


result = chickenpox_by_sex()
print(result)
```

Question: 4

```python
import pandas as pd

def corr_chickenpox():

    df = pd.read_csv("assets/NISPUF17.csv")


    had_chickenpox_column = df['HAD_CPOX']
    num_chickenpox_vaccine_column = df['P_NUMVRC']

        correlation = had_chickenpox_column.corr(num_chickenpox_vaccine_column)

    return correlation

result = corr_chickenpox()
print(result)
```