Part 1 of Analysis

I. Gender and Race Analysis - Phase 1 vs Phase 2

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2. Phase 2 Gender
3. Phase 1 Race
4. Phase 2 Race
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6. Phase 1 vs Phase 2 Gender

II. School Discipline Analysis - Phase 1 vs Phase 2

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2. Sent Home By Race
3. Suspended By Race
4. Expelled By Race
5. Kicked Out of Class By Race and Gender
6. Sent Home By Race and Gender
7. Suspended By Race and Gender
8. Expelled By Race and Gender
9. People on an IEP, Kicked Out of Class By Race
10. People on an IEP, Sent Home By Race
11. People on an IEP, Suspended By Race
12. People on an IEP, Expelled By Race

In [13]:
```
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
import seaborn as sns
sns.set()
```

In [14]:
```
phase1 = pd.read_csv('phase1_checkbox_data.csv')
phase2 = pd.read_csv('final_checkbox_data.csv')
#phase2 = pd.read_csv('final_checkbox_data.csv')
```

In [15]:
```
phase1 = phase1.rename(columns={'8': 'Phase 1 Race', '9': 'Phase 1 Gender'})
phase2 = phase2.rename(columns={'8': 'Phase 2 Race', '9': 'Phase 2 Gender'})
phase1.head()
```

Out[15]:

	PDF Number	1	2	Phase 1 Race	Phase 1 Gender	10	11	18	19	20	...
0	3.0	County Jail	Detained	White	Female	No	Straight (Heterosexual)	No	No	Parent,Other Family Member,Other:	...
1	71.0	County Jail	Sentenced	White	Female	No	Bisexual	No	Yes	Parent,Other Family Member	...

	PDF Number	1	2	Phase 1 Race	Phase 1 Gender	10	11	18	19	20	...
2	72.0	County Jail	Detained	Latinx	Female	No	Straight (Heterosexual)	No	No	Parent,Other Family Member,Other:	...
3	73.0	State Prison	Detained	White	Female	No	Straight (Heterosexual)	No	No	Parent,Other Family Member	...
4	2.0	County Jail	Sentenced	Black/African American,White,Latinx	Male	No	Straight (Heterosexual)	Yes	No	Other Family Member	...

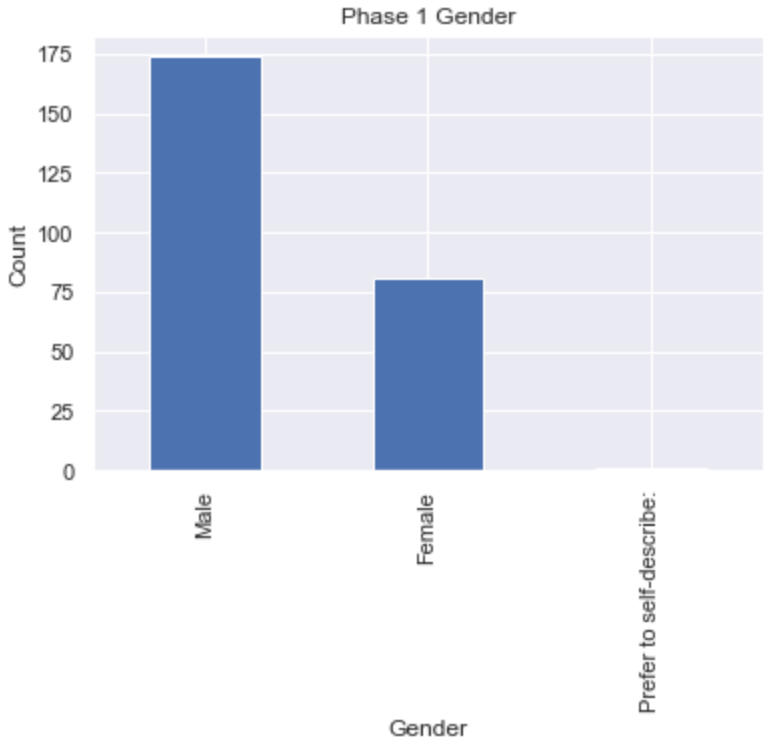
5 rows × 73 columns

I. Gender and Race Analysis - Phase 1 vs Phase 2

1. Phase 1 Gender

In [16]:
```
phase1['Phase 1 Gender'] = phase1['Phase 1 Gender'].replace('Prefer to Self Describe:', 'P
gender1 = phase1['Phase 1 Gender'].value_counts()
gender1.plot(kind='bar')
plt.xlabel('Gender')
plt.ylabel('Count')
plt.title('Phase 1 Gender')
gender1
```

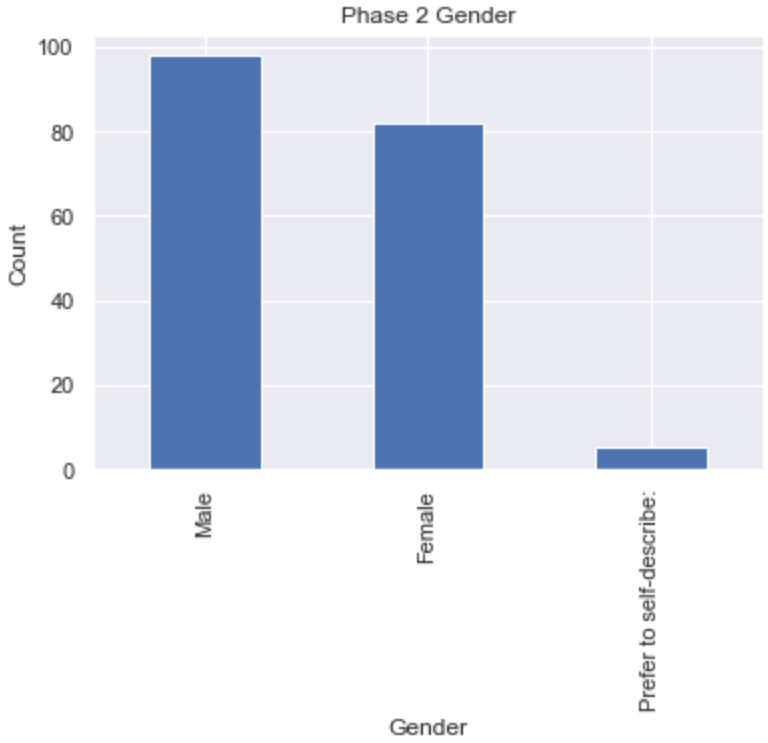
Out[16]:
```
Male                          174
Female                         81
Prefer to self-describe:        1
Name: Phase 1 Gender, dtype: int64
```



2. Phase 2 Gender

In [17]:
```
phase2['Phase 2 Gender'] = phase2['Phase 2 Gender'].replace('Female, Prefer to self-descri
gender2 = phase2['Phase 2 Gender'].value_counts()
gender2.plot(kind='bar')
plt.xlabel('Gender')
plt.ylabel('Count')
plt.title('Phase 2 Gender')
gender2
```

Out[17]:
```
Male                          98
Female                        82
Prefer to self-describe:       5
Name: Phase 2 Gender, dtype: int64
```



3. Phase 1 Race

In [18]:
```
phase1['Phase 1 Race'] = phase1['Phase 1 Race'].replace(['Multi-Race,Prefer to self descri
                    'White,Multi-Race,Latinx', 'Black/African American,White,Multi-Race','Mu
                    'White,Latinx','Black/African American,Prefer to self describe','Middle
                     'Black/African American,Multi-Race,Latinx','Latinx,Prefer to self descr
                     'White,Native American','Asian,White','Black/African American,White,Lat
                     'Black/African American,Multi-Race'], 'Multi-Race')
race1 = phase1['Phase 1 Race'].value_counts()

print('Phase 1 Race\n', race1)
```

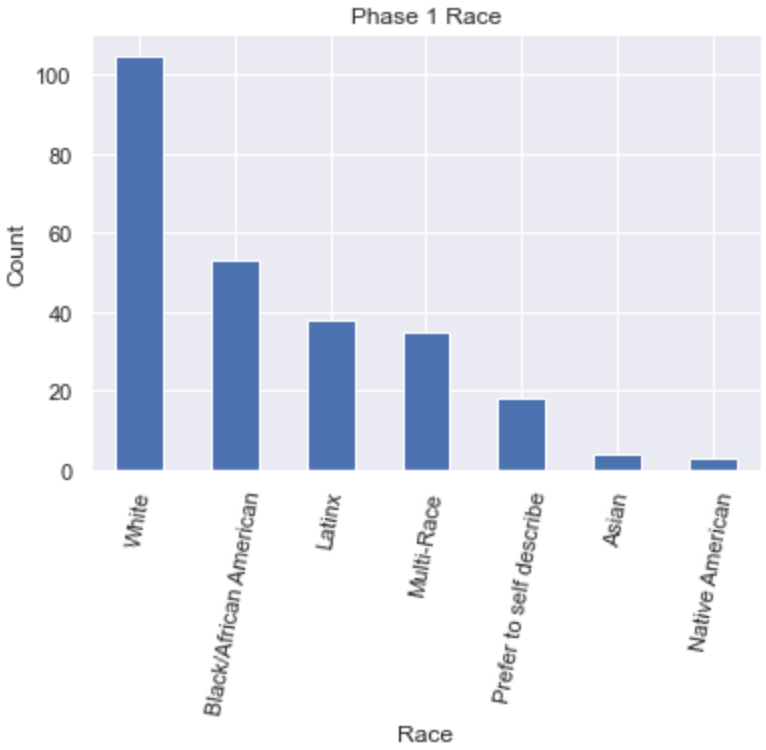
```
Phase 1 Race
 White                        105
Black/African American         53
Latinx                         38
Multi-Race                     35
Prefer to self describe        18
Asian                           4
Native American                 3
Name: Phase 1 Race, dtype: int64
```

In [19]:
```
race1.plot(kind='bar')
plt.xlabel('Race')
plt.ylabel('Count')
plt.title('Phase 1 Race')
```

```
plt.xticks(rotation = 80)

plt.show
```

Out[19]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



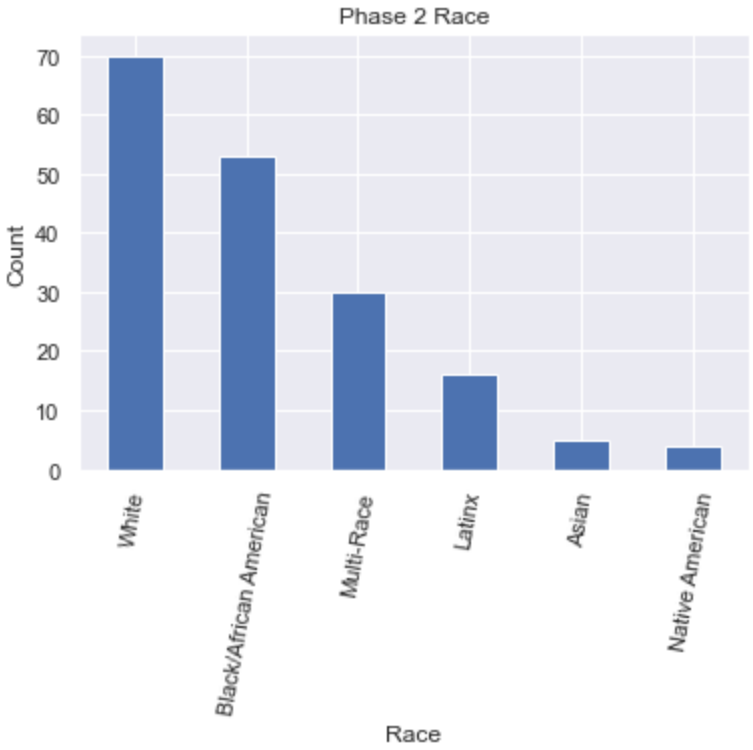
4. Phase 2 Race

In [20]:
```
phase2['Phase 2 Race'] = phase2['Phase 2 Race'].replace(['Black/African American, Latinx',
                   'White, Native Hawaiian/Pacific Islander', 'Black/African American,White
                   'White,Latinx','Latinx, Prefer to self-describe:','Asian White','White,I
                    'Black/African American,Multi-Race,Latinx','Latinx,Prefer to self descr
                    'White,Native American','Prefer to self-describe:','Black/African Ameri
                    'Multi-Race, Prefer to self-describe:','Black/African American, White,
                    'Black/African American, White','Black/African American, Multi-Race','W
race2 = phase2['Phase 2 Race'].value_counts()
print('Phase 2 Race\n',race2)
```

```
Phase 2 Race
 White                          70
Black/African American          53
Multi-Race                      30
Latinx                          16
Asian                            5
Native American                  4
Name: Phase 2 Race, dtype: int64
```

In [21]:
```
race2.plot(kind='bar')
plt.xlabel('Race')
plt.ylabel('Count')
plt.title('Phase 2 Race')
plt.xticks(rotation = 80)
plt.show
```

Out[21]:
```
<function matplotlib.pyplot.show(close=None, block=None)>
```



In [22]:

```
race1.to_frame()
race2.to_frame()
race = pd.concat([race1,race2],axis=1)
race.head()
```

Out[22]:

	Phase 1 Race	Phase 2 Race
White	105	70.0
Black/African American	53	53.0
Latinx	38	16.0
Multi-Race	35	30.0
Prefer to self describe	18	NaN

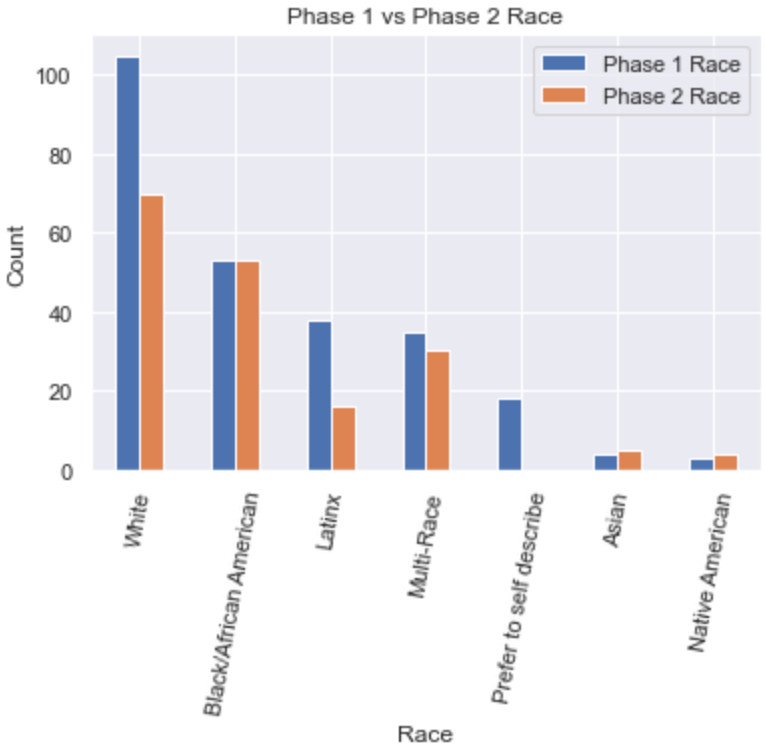
5. Phase 1 vs Phase 2 Race

In [23]:

```
ax = race.plot.bar(rot=0)
plt.xticks(rotation = 80)
plt.xlabel('Race')
plt.ylabel('Count')
plt.title('Phase 1 vs Phase 2 Race')
```

Out[23]:

```
Text(0.5, 1.0, 'Phase 1 vs Phase 2 Race')
```



In [24]:
```
gender1.to_frame()
gender2.to_frame()
gender = pd.concat([gender1,gender2],axis=1)
gender.head()
```

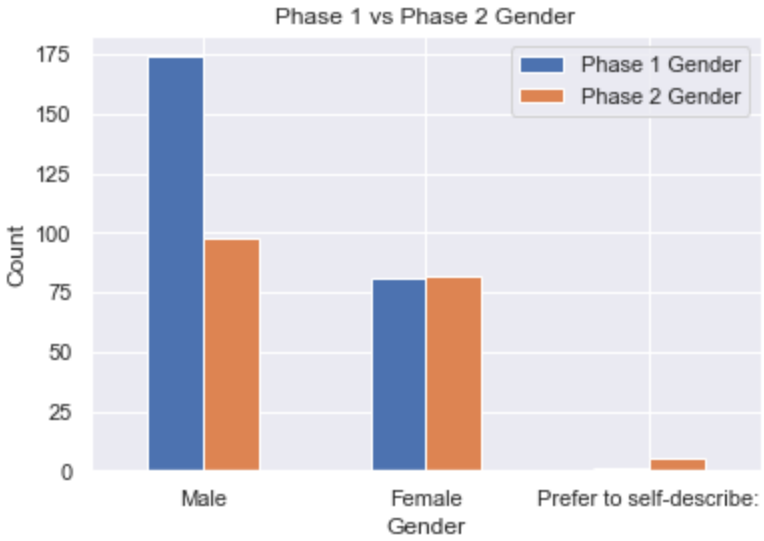
Out[24]:

	Phase 1 Gender	Phase 2 Gender
Male	174	98
Female	81	82
Prefer to self-describe:	1	5

6. Phase 1 vs Phase 2 Gender

In [25]:
```
ax2 = gender.plot.bar(rot=0)
plt.xlabel('Gender')
plt.ylabel('Count')
plt.title('Phase 1 vs Phase 2 Gender')
```

Out[25]:
```
Text(0.5, 1.0, 'Phase 1 vs Phase 2 Gender')
```



In [26]:

```
# creating data frame with columns only relevant to discipline
discipline = phase2.drop(['1', '2','10','11','18','19','20','21','22','23','24','25','26',
            '29.1.5','29.1.6','29.1.7','31','31.1','36','48','48.1.1','48.1.2','48.1.3','4
discipline2 = phase1.drop(['1', '2','10','11','18','19','20','21','22','23','24','25','26'
            '29.5','29.6','29.7','31','31.1','36','48','48.1','48.2','48.3','49','49.2','5
```

In [27]:

```
discipline2.head()
```

Out[27]:

	PDF Number	Phase 1 Race	Phase 1 Gender	30	33	33.1	34	35	37	38	...	60.3	61.1	61.2	61.3	62.1	62.2
0	3.0	White	Female	No	No - I was never on an IEP in school	NaN	No	NaN	No	Yes	...	a few times	never	never	a few times	no	nc
1	71.0	White	Female	No	No - I was never on an IEP in school	NaN	No	No	No	Yes	...	often	never	often	often	no	nc
2	72.0	Latinx	Female	No	No - I was never on an IEP in school	NaN	No	No	No	No	...	never	never	never	never	no	nc
3	73.0	White	Female	No	No - I was never on an IEP in school	NaN	No	NaN	No	Yes	...	a few times	neve	never	once	no	nc
4	2.0	Multi-Race	Male	No	NaN	NaN	NaN	NaN	No	No	...	once	never	never	a few times	no	nc

5 rows × 40 columns

II. School Discipline Analysis - Phase 1 vs Phase 2

1. Kicked Out of Class by Race

In [28]:

```
# Phase 1
discipline2['59.1'] = discipline2['59.1'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race combined values
kicked_out_elem_and_race2 = discipline2[discipline2['59.1'] == 'Kicked Out'].groupby('Phas
kicked_out_elem_and_race2 = (kicked_out_elem_and_race2 / kicked_out_elem_and_race2.sum())
print('Kicked Out Elementary School',kicked_out_elem_and_race2)

discipline2['59.2'] = discipline2['59.2'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race combined values
kicked_out_middle_and_race2 = discipline2[discipline2['59.2'] == 'Kicked Out'].groupby('Ph
kicked_out_middle_and_race2 = (kicked_out_middle_and_race2 / kicked_out_middle_and_race2.s
print('Kicked Out Middle School',kicked_out_middle_and_race2)

discipline2['59.3'] = discipline2['59.3'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race combined values
kicked_out_high_and_race2 = discipline2[discipline2['59.3'] == 'Kicked Out'].groupby('Phas
kicked_out_high_and_race2 = (kicked_out_high_and_race2 / kicked_out_high_and_race2.sum())
print('Kicked Out High School',kicked_out_high_and_race2)
```

```
Kicked Out Elementary School Phase 1 Race
Black/African American     17.647059
Latinx                     13.725490
Multi-Race                 19.607843
Prefer to self describe    11.764706
White                      37.254902
dtype: float64
Kicked Out Middle School Phase 1 Race
Black/African American     18.666667
Latinx                     13.333333
Multi-Race                 20.000000
Prefer to self describe    13.333333
White                      34.666667
dtype: float64
Kicked Out High School Phase 1 Race
Black/African American     19.318182
Latinx                     13.636364
Multi-Race                 17.045455
Native American             1.136364
Prefer to self describe    10.227273
White                      38.636364
dtype: float64
```

In [36]:

```
kicked_out_elem_and_race2_count = discipline2[discipline2['59.1'] == 'Kicked Out'].groupby
kicked_out_middle_and_race2_count = discipline2[discipline2['59.2'] == 'Kicked Out'].group
kicked_out_high_and_race2_count = discipline2[discipline2['59.3'] == 'Kicked Out'].groupby
print('Kicked Out Elementary School',kicked_out_elem_and_race2_count)
print('Kicked Out Middle School',kicked_out_middle_and_race2_count)
print('Kicked Out High School',kicked_out_high_and_race2_count)
```

```
Kicked Out Elementary School Phase 1 Race
Black/African American      9
Latinx                      7
Multi-Race                 10
Prefer to self describe     6
White                      19
dtype: int64
Kicked Out Middle School Phase 1 Race
Black/African American     14
```

```
Latinx                      10
Multi-Race                  15
Prefer to self describe     10
White                       26
dtype: int64
Kicked Out High School Phase 1 Race
Black/African American      17
Latinx                      12
Multi-Race                  15
Native American              1
Prefer to self describe      9
White                       34
dtype: int64
```

In [30]:

```
# Phase 2
discipline['59.1'] = discipline['59.1'].replace(['Often','A few times','Once','A few times
# kicked out of class and race combined values
kicked_out_elem_and_race = discipline[discipline['59.1'] == 'Kicked Out'].groupby('Phase 2
kicked_out_elem_and_race = (kicked_out_elem_and_race / kicked_out_elem_and_race.sum()) *10
print('Kicked Out Elementary School',kicked_out_elem_and_race)

discipline['59.2'] = discipline['59.2'].replace(['Often','A few times','Once','A few times
# kicked out of class and race combined values
kicked_out_middle_and_race = discipline[discipline['59.2'] == 'Kicked Out'].groupby('Phase
kicked_out_middle_and_race = (kicked_out_middle_and_race / kicked_out_middle_and_race.sum
print('Kicked Out Middle School',kicked_out_middle_and_race)

discipline['59.3'] = discipline['59.3'].replace(['Often','A few times','Once','A few times
# kicked out of class and race combined values
kicked_out_high_and_race = discipline[discipline['59.3'] == 'Kicked Out'].groupby('Phase 2
kicked_out_high_and_race = (kicked_out_high_and_race / kicked_out_high_and_race.sum()) *10
print('Kicked Out High School',kicked_out_high_and_race)
```

```
Kicked Out Elementary School Phase 2 Race
Black/African American    34.042553
Latinx                    12.765957
Multi-Race                21.276596
Native American            2.127660
White                     29.787234
dtype: float64
Kicked Out Middle School Phase 2 Race
Black/African American    33.766234
Latinx                    11.688312
Multi-Race                22.077922
Native American            2.597403
White                     29.870130
dtype: float64
Kicked Out High School Phase 2 Race
Black/African American    33.333333
Latinx                     9.523810
Multi-Race                19.047619
Native American            2.380952
White                     35.714286
dtype: float64
```

In [37]:

```
kicked_out_elem_and_race_count = discipline[discipline['59.1'] == 'Kicked Out'].groupby('
kicked_out_middle_and_race_count = discipline[discipline['59.2'] == 'Kicked Out'].groupby
kicked_out_high_and_race_count = discipline[discipline['59.3'] == 'Kicked Out'].groupby('
print('Kicked Out Elementary School',kicked_out_elem_and_race_count)
print('Kicked Out Middle School',kicked_out_middle_and_race_count)
print('Kicked Out High School',kicked_out_high_and_race_count)
```

```
Kicked Out Elementary School Phase 2 Race
Black/African American    16
```

```
Latinx                      6
Multi-Race                 10
Native American             1
White                      14
dtype: int64
Kicked Out Middle School Phase 2 Race
Black/African American     26
Latinx                      9
Multi-Race                 17
Native American             2
White                      23
dtype: int64
Kicked Out High School Phase 2 Race
Black/African American     28
Latinx                      8
Multi-Race                 16
Native American             2
White                      30
dtype: int64
```

In [31]:

```
kicked_out_elem_and_race2.to_frame()
kicked_out_elem_and_race.to_frame()
kicked_out_elem_race = pd.concat([kicked_out_elem_and_race2,kicked_out_elem_and_race],axis
kicked_out_elem_race.head()
```

Out[31]:

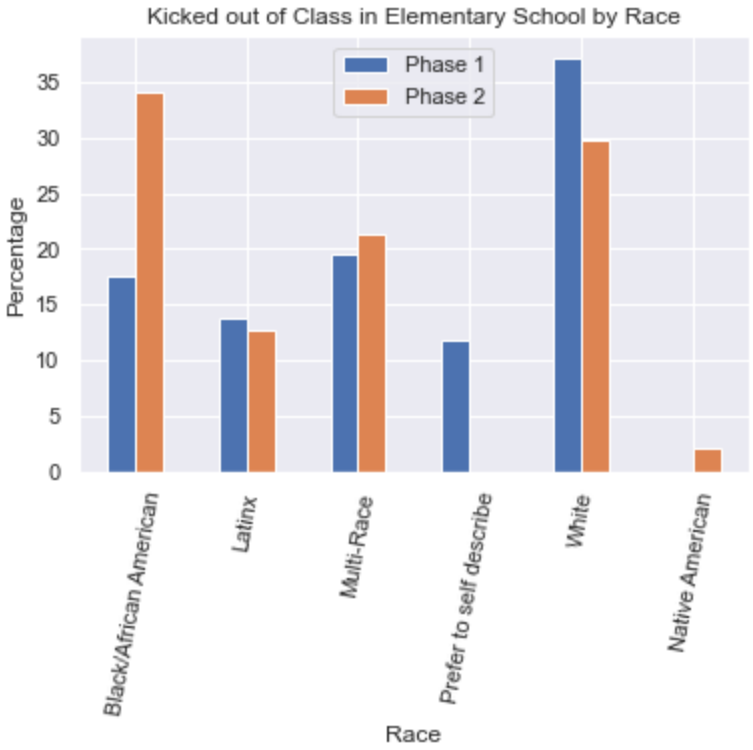
	0	1
Black/African American	17.647059	34.042553
Latinx	13.725490	12.765957
Multi-Race	19.607843	21.276596
Prefer to self describe	11.764706	NaN
White	37.254902	29.787234

In [32]:

```
ax2 = kicked_out_elem_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked out of Class in Elementary School by Race')
```

Out[32]:

```
Text(0.5, 1.0, 'Kicked out of Class in Elementary School by Race')
```



In [33]:

```
kicked_out_middle_and_race2.to_frame()
kicked_out_middle_and_race.to_frame()
kicked_out_middle_race = pd.concat([kicked_out_middle_and_race2,kicked_out_middle_and_race
kicked_out_middle_race.head()
```

Out[33]:

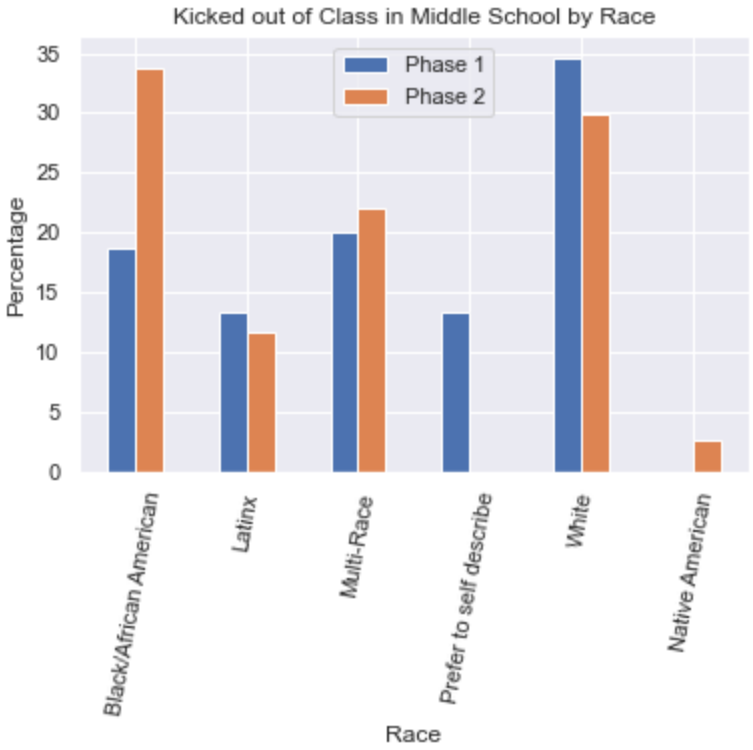
	0	1
Black/African American	18.666667	33.766234
Latinx	13.333333	11.688312
Multi-Race	20.000000	22.077922
Prefer to self describe	13.333333	NaN
White	34.666667	29.870130

In [34]:

```
ax2 = kicked_out_middle_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked out of Class in Middle School by Race')
```

Out[34]:

```
Text(0.5, 1.0, 'Kicked out of Class in Middle School by Race')
```



In [40]:

```
kicked_out_high_and_race2.to_frame()
kicked_out_high_and_race.to_frame()
kicked_out_high_race = pd.concat([kicked_out_high_and_race2,kicked_out_high_and_race],axis
kicked_out_high_race.head()
```

Out[40]:

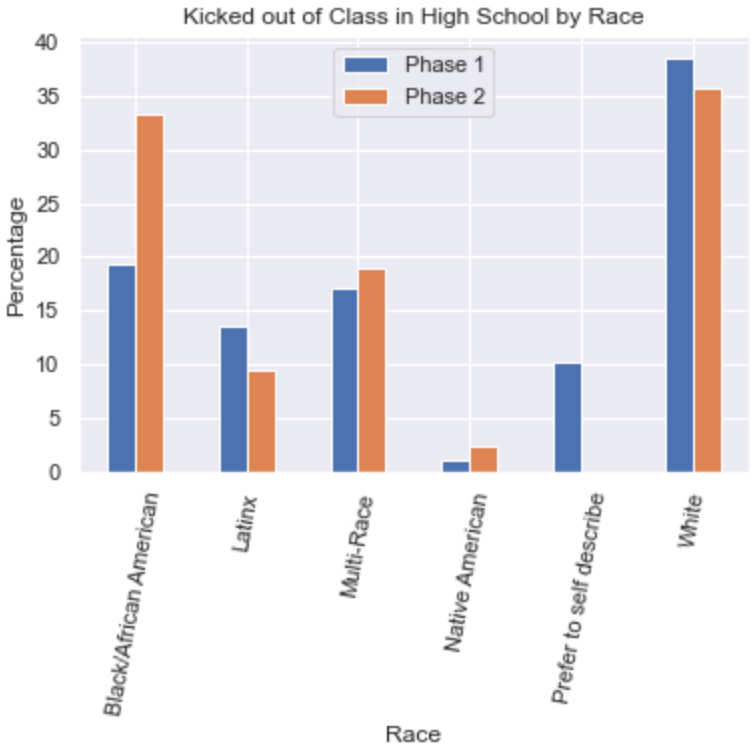
	0	1
Black/African American	19.318182	33.333333
Latinx	13.636364	9.523810
Multi-Race	17.045455	19.047619
Native American	1.136364	2.380952
Prefer to self describe	10.227273	NaN

In [41]:

```
ax2 = kicked_out_high_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked out of Class in High School by Race')
```

Out[41]:

```
Text(0.5, 1.0, 'Kicked out of Class in High School by Race')
```

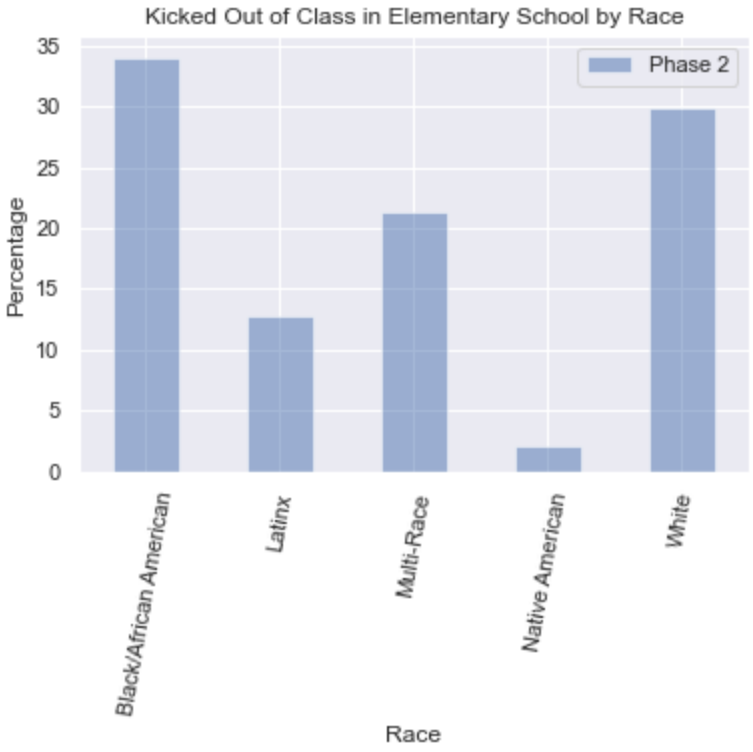


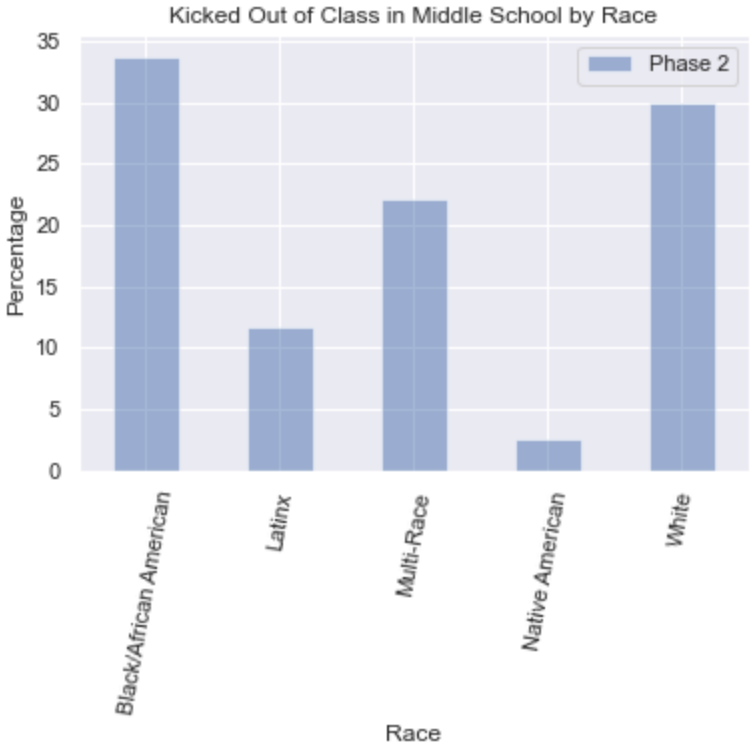
In [42]:

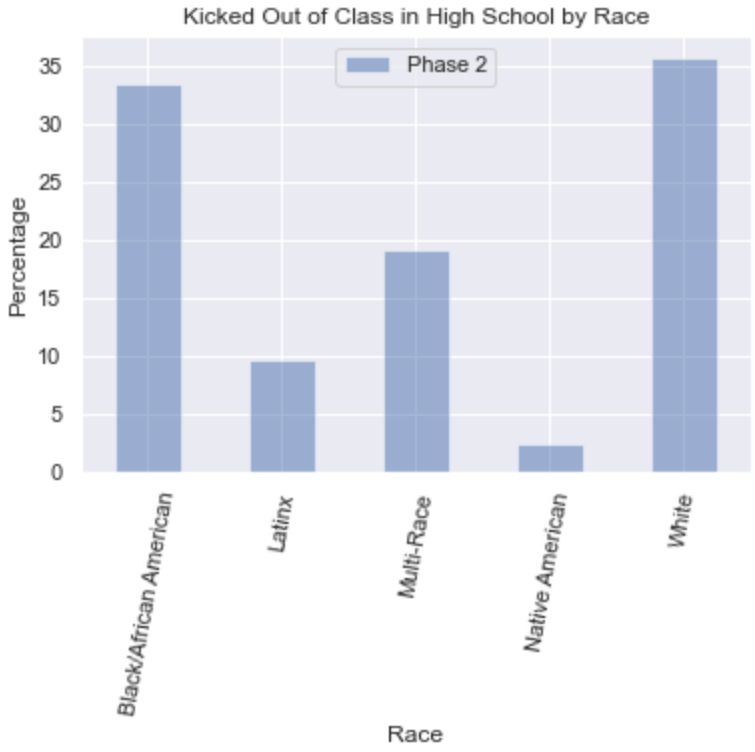
```
# kicked out of class in elementary school by race
kicked_out_elem_and_race.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in Elementary School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# kicked out of class in middle school by race
kicked_out_middle_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in Middle School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# kicked out of class in high school by race
kicked_out_high_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in High School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Kicked Out of Class in Elementary School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race


Kicked Out of Class in Middle School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race



2. Sent Home by Race

In [43]:

```
# Phase 1
discipline2['60.1'] = discipline2['60.1'].replace(['Often','A few times','Once','A few tir
# sent home and race combined values
sent_home_elem_and_race2 = discipline2[discipline2['60.1'] == 'Sent Home'].groupby('Phase
sent_home_elem_and_race2 = (sent_home_elem_and_race2 / sent_home_elem_and_race2.sum()) *10
print('Sent Home Elementary School',sent_home_elem_and_race2)

discipline2['60.2'] = discipline2['60.2'].replace(['Often','A few times','Once','A few tir
# sent home and race combined values
sent_home_middle_and_race2 = discipline2[discipline2['60.2'] == 'Sent Home'].groupby('Phas
sent_home_middle_and_race2 = (sent_home_middle_and_race2 / sent_home_middle_and_race2.sum
print('Sent Home Middle School',sent_home_middle_and_race2)

discipline2['60.3'] = discipline2['60.3'].replace(['Often','A few times','Once','A few tir
# sent home and race combined values
sent_home_high_and_race2 = discipline2[discipline2['60.3'] == 'Sent Home'].groupby('Phase
sent_home_high_and_race2 = (sent_home_high_and_race2 / sent_home_high_and_race2.sum()) *10
print('Sent Home High School',sent_home_high_and_race2)
```

```
Sent Home Elementary School Phase 1 Race
Black/African American     19.565217
Latinx                     13.043478
Multi-Race                 23.913043
Prefer to self describe    10.869565
White                      32.608696
dtype: float64
Sent Home Middle School Phase 1 Race
Black/African American     21.739130
Latinx                     10.144928
Multi-Race                 20.289855
Prefer to self describe    11.594203
White                      36.231884
dtype: float64
Sent Home High School Phase 1 Race
Black/African American     20.689655
Latinx                     12.643678
Multi-Race                 14.942529
```

```
Native American             1.149425
Prefer to self describe    10.344828
White                      40.229885
dtype: float64
```

In [44]:

```
sent_home_elem_and_race2_count = discipline2[discipline2['60.1'] == 'Sent Home'].groupby('
sent_home_middle_and_race2_count = discipline2[discipline2['60.2'] == 'Sent Home'].groupby
sent_home_high_and_race2_count = discipline2[discipline2['60.3'] == 'Sent Home'].groupby('
print('Sent Home Elementary School',sent_home_elem_and_race2_count)
print('Sent Home Middle School',sent_home_middle_and_race2_count)
print('Sent Home High School',sent_home_high_and_race2_count)
```

```
Sent Home Elementary School Phase 1 Race
Black/African American      9
Latinx                      6
Multi-Race                 11
Prefer to self describe     5
White                      15
dtype: int64
Sent Home Middle School Phase 1 Race
Black/African American     15
Latinx                      7
Multi-Race                 14
Prefer to self describe     8
White                      25
dtype: int64
Sent Home High School Phase 1 Race
Black/African American     18
Latinx                     11
Multi-Race                 13
Native American             1
Prefer to self describe     9
White                      35
dtype: int64
```

In [47]:

```
# Phase 2
discipline['60.1'] = discipline['60.1'].replace(['Often','A few times','Once','A few times
# sent home and race combined values
sent_home_elem_and_race = discipline[discipline['60.1'] == 'Sent Home'].groupby('Phase 2 R
sent_home_elem_and_race = (sent_home_elem_and_race / sent_home_elem_and_race.sum()) *100
print('Sent Home Elementary School',sent_home_elem_and_race)

discipline['60.2'] = discipline['60.2'].replace(['Often','A few times','Once','A few times
# sent home and race combined values
sent_home_middle_and_race = discipline[discipline['60.2'] == 'Sent Home'].groupby('Phase 2
sent_home_middle_and_race = (sent_home_middle_and_race / sent_home_middle_and_race.sum())
print('Sent Home Middle School',sent_home_middle_and_race)

discipline['60.3'] = discipline['60.3'].replace(['Often','A few times','Once','A few times
# sent home and race combined values
sent_home_high_and_race = discipline[discipline['60.3'] == 'Sent Home'].groupby('Phase 2 R
sent_home_high_and_race = (sent_home_high_and_race / sent_home_high_and_race.sum()) *100
print('Sent Home High School',sent_home_high_and_race)
```

```
Sent Home Elementary School Phase 2 Race
Black/African American    35.555556
Latinx                    11.111111
Multi-Race                22.222222
Native American            2.222222
White                     28.888889
dtype: float64
Sent Home Middle School Phase 2 Race
Black/African American    34.285714
Latinx                    10.000000
```

```
Multi-Race                21.428571
Native American            2.857143
White                     31.428571
dtype: float64
Sent Home High School Phase 2 Race
Black/African American    35.897436
Latinx                     8.974359
Multi-Race                17.948718
Native American            2.564103
White                     34.615385
dtype: float64
```

In [45]:

```
sent_home_elem_and_race_count = discipline[discipline2['60.1'] == 'Sent Home'].groupby('Ph
sent_home_middle_and_race_count = discipline[discipline2['60.2'] == 'Sent Home'].groupby('
sent_home_high_and_race_count = discipline[discipline2['60.3'] == 'Sent Home'].groupby('Ph
print('Sent Home Elementary School',sent_home_elem_and_race_count)
print('Sent Home Middle School',sent_home_middle_and_race_count)
print('Sent Home High School',sent_home_high_and_race_count)
```

```
Sent Home Elementary School Phase 2 Race
Asian                      2
Black/African American    10
Latinx                     3
Multi-Race                 6
White                      8
dtype: int64
Sent Home Middle School Phase 2 Race
Asian                      3
Black/African American    11
Latinx                     7
Multi-Race                10
White                      9
dtype: int64
Sent Home High School Phase 2 Race
Asian                      3
Black/African American    13
Latinx                     6
Multi-Race                 9
Native American            1
White                     21
dtype: int64
/var/folders/q4/ptkzrlkn4jv7hpl3gcsd4vqc0000gn/T/ipykernel_1479/821751427.py:1: UserWarnin
g: Boolean Series key will be reindexed to match DataFrame index.
  sent_home_elem_and_race_count = discipline[discipline2['60.1'] == 'Sent Home'].groupby
('Phase 2 Race').size()
/var/folders/q4/ptkzrlkn4jv7hpl3gcsd4vqc0000gn/T/ipykernel_1479/821751427.py:2: UserWarnin
g: Boolean Series key will be reindexed to match DataFrame index.
  sent_home_middle_and_race_count = discipline[discipline2['60.2'] == 'Sent Home'].groupby
('Phase 2 Race').size()
/var/folders/q4/ptkzrlkn4jv7hpl3gcsd4vqc0000gn/T/ipykernel_1479/821751427.py:3: UserWarnin
g: Boolean Series key will be reindexed to match DataFrame index.
  sent_home_high_and_race_count = discipline[discipline2['60.3'] == 'Sent Home'].groupby
('Phase 2 Race').size()
```

In [48]:

```
sent_home_elem_and_race2.to_frame()
sent_home_elem_and_race.to_frame()
sent_home_elem_race = pd.concat([sent_home_elem_and_race2,sent_home_elem_and_race],axis=1)
sent_home_elem_race.head()
```

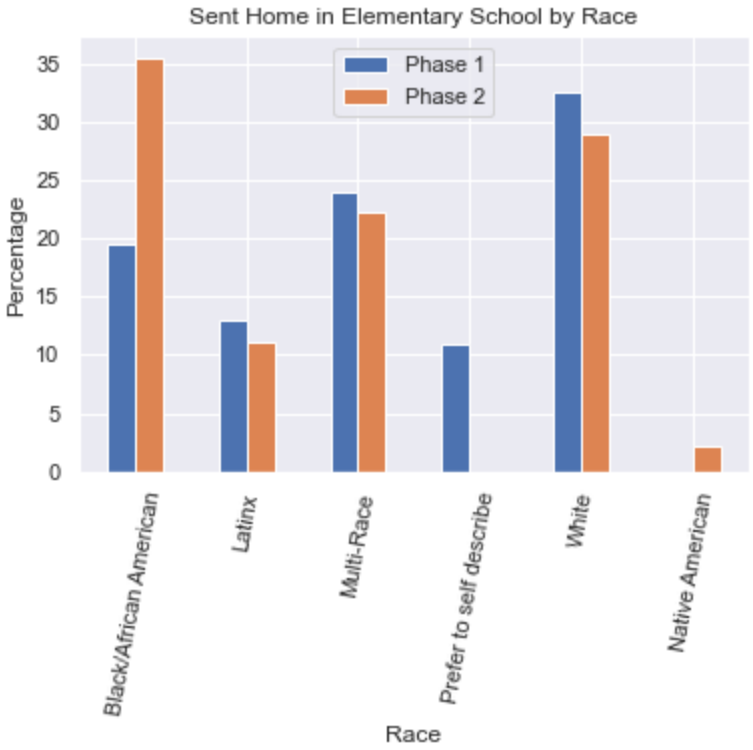
Out[48]:

	0	1
Black/African American	19.565217	35.555556
Latinx	13.043478	11.111111

	0	1
Multi-Race	23.913043	22.222222
Prefer to self describe	10.869565	NaN
White	32.608696	28.888889

In [49]:
```
ax2 = sent_home_elem_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in Elementary School by Race')
```

Out[49]:
```
Text(0.5, 1.0, 'Sent Home in Elementary School by Race')
```



In [50]:
```
sent_home_middle_and_race2.to_frame()
sent_home_middle_and_race.to_frame()
sent_home_middle_race = pd.concat([sent_home_middle_and_race2,sent_home_middle_and_race],a
sent_home_middle_race.head()
```

Out[50]:

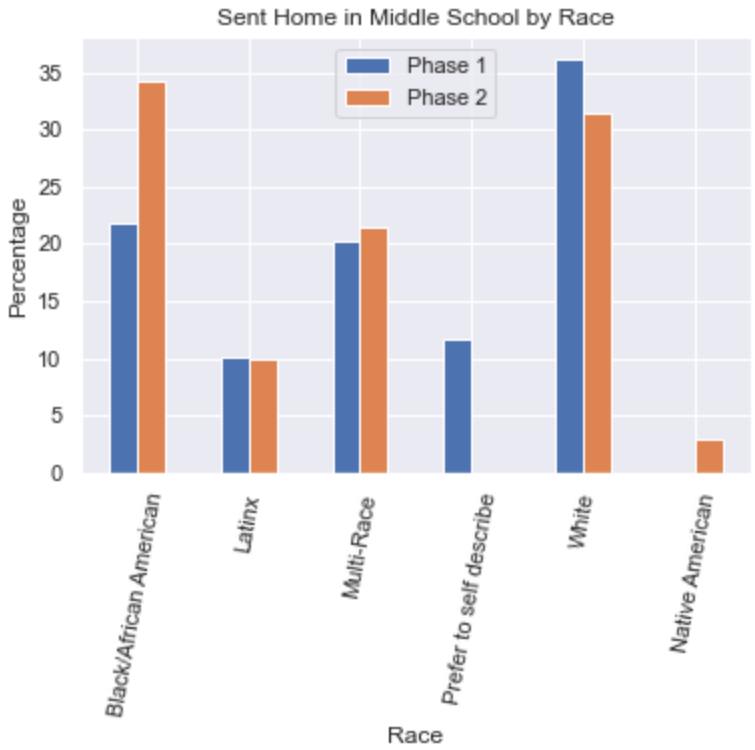
	0	1
Black/African American	21.739130	34.285714
Latinx	10.144928	10.000000
Multi-Race	20.289855	21.428571
Prefer to self describe	11.594203	NaN
White	36.231884	31.428571

In [51]:
```
ax2 = sent_home_middle_race.plot.bar(rot=0)
plt.xlabel('Race')
```

```
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in Middle School by Race')
```

Out[51]:

```
Text(0.5, 1.0, 'Sent Home in Middle School by Race')
```



In [52]:

```
sent_home_high_and_race2.to_frame()
sent_home_high_and_race.to_frame()
sent_home_high_race = pd.concat([sent_home_high_and_race2,sent_home_high_and_race],axis=1)
sent_home_high_race.head()
```

Out[52]:

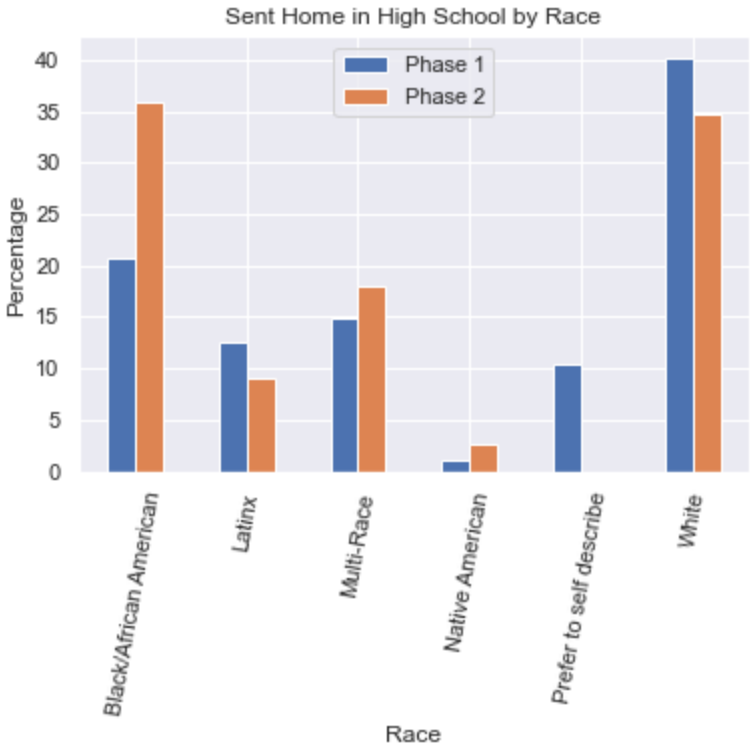
	0	1
Black/African American	20.689655	35.897436
Latinx	12.643678	8.974359
Multi-Race	14.942529	17.948718
Native American	1.149425	2.564103
Prefer to self describe	10.344828	NaN

In [53]:

```
ax2 = sent_home_high_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in High School by Race')
```

Out[53]:

```
Text(0.5, 1.0, 'Sent Home in High School by Race')
```

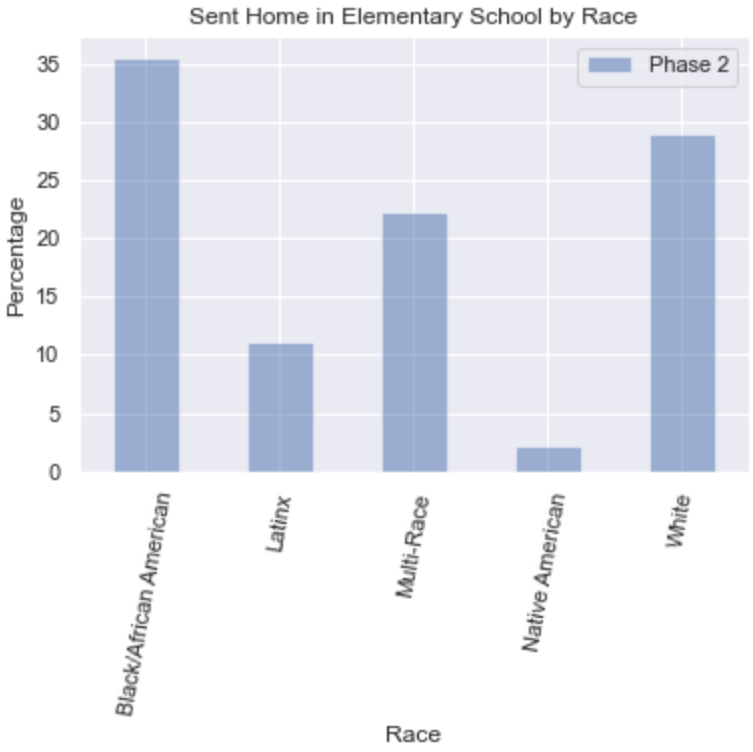


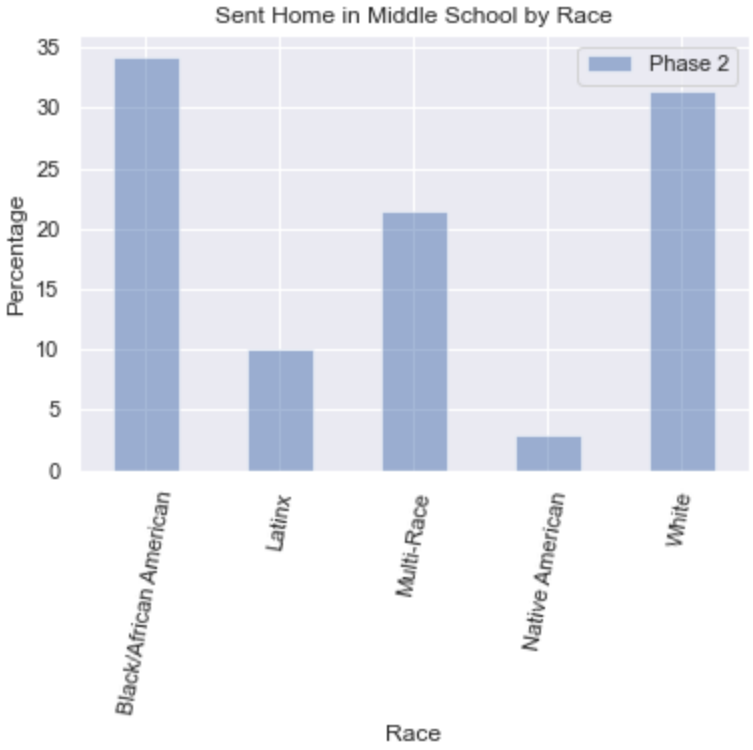
In [54]:

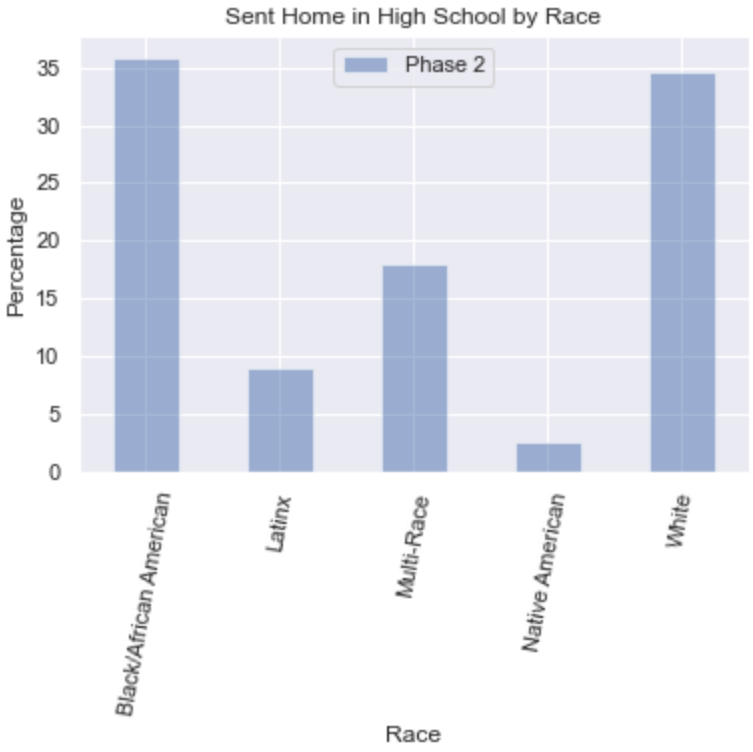
```
# sent home in elementary school by race
plt.subplot(1, 1, 1)
sent_home_elem_and_race.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Sent Home in Elementary School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# sent home in middle school by race
plt.subplot(1,1,1)
sent_home_middle_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Sent Home in Middle School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# sent home in high school by race
plt.subplot(1,1,1)
sent_home_high_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Sent Home in High School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Sent Home in Elementary School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race


Sent Home in Middle School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race



3. Suspended by Race

In [55]:

```
# Phase 1
discipline2['61.1'] = discipline2['61.1'].replace(['Often','A few times','Once','A few tir
# suspended and race combined values
suspended_elem_and_race2 = discipline2[discipline2['61.1'] == 'Suspended'].groupby('Phase
suspended_elem_and_race2 = (suspended_elem_and_race2 / suspended_elem_and_race2.sum()) *10
print('Suspended in Elementary School',suspended_elem_and_race2)

discipline2['61.2'] = discipline2['61.2'].replace(['Often','A few times','Once','A few tir
# suspended and race combined values
suspended_middle_and_race2 = discipline2[discipline2['61.2'] == 'Suspended'].groupby('Phas
suspended_middle_and_race2 = (suspended_middle_and_race2 / suspended_middle_and_race2.sum
print('Suspended in Middle School',suspended_middle_and_race2)

discipline2['61.3'] = discipline2['61.3'].replace(['Often','A few times','Once','A few tir
# suspended and race combined values
suspended_high_and_race2 = discipline2[discipline2['61.3'] == 'Suspended'].groupby('Phase
suspended_high_and_race2 = (suspended_high_and_race2 / suspended_high_and_race2.sum()) *10
print('Suspended in High School',suspended_high_and_race2)
```

```
Suspended in Elementary School Phase 1 Race
Black/African American     25.00
Latinx                     12.50
Multi-Race                 18.75
Prefer to self describe    12.50
White                      31.25
dtype: float64
Suspended in Middle School Phase 1 Race
Black/African American     17.721519
Latinx                     13.924051
Multi-Race                 21.518987
Prefer to self describe    11.392405
White                      35.443038
dtype: float64
Suspended in High School Phase 1 Race
Black/African American     19.387755
Latinx                     12.244898
Multi-Race                 15.306122
```

```
Native American             1.020408
Prefer to self describe    10.204082
White                      41.836735
dtype: float64
```

In [56]:

```
suspended_elem_and_race2_count = discipline2[discipline2['61.1'] == 'Suspended'].groupby('
suspended_middle_and_race2_count = discipline2[discipline2['61.2'] == 'Suspended'].groupby
suspended_high_and_race2_count = discipline2[discipline2['61.3'] == 'Suspended'].groupby('
print('Suspended in Elementary School',suspended_elem_and_race2_count)
print('Suspended in Middle School',suspended_middle_and_race2_count)
print('Suspended in High School',suspended_high_and_race2_count)
```

```
Suspended in Elementary School Phase 1 Race
Black/African American      8
Latinx                      4
Multi-Race                  6
Prefer to self describe     4
White                      10
dtype: int64
Suspended in Middle School Phase 1 Race
Black/African American     14
Latinx                     11
Multi-Race                 17
Prefer to self describe     9
White                      28
dtype: int64
Suspended in High School Phase 1 Race
Black/African American     19
Latinx                     12
Multi-Race                 15
Native American             1
Prefer to self describe    10
White                      41
dtype: int64
```

In [57]:

```
# Phase 2
discipline['61.1'] = discipline['61.1'].replace(['Often','A few times','Once','A few times
# suspended and race combined values
suspended_elem_and_race = discipline[discipline['61.1'] == 'Suspended'].groupby('Phase 2 R
suspended_elem_and_race = (suspended_elem_and_race / suspended_elem_and_race.sum()) *100
print('Suspended in Elementary School',suspended_elem_and_race)

discipline['61.2'] = discipline['61.2'].replace(['Often','A few times','Once','A few times
# suspended and race combined values
suspended_middle_and_race = discipline[discipline['61.2'] == 'Suspended'].groupby('Phase 2
suspended_middle_and_race = (suspended_middle_and_race / suspended_middle_and_race.sum())
print('Suspended in Middle School',suspended_middle_and_race)

discipline['61.3'] = discipline['61.3'].replace(['Often','A few times','Once','A few times
# suspended and race combined values
suspended_high_and_race = discipline[discipline['61.3'] == 'Suspended'].groupby('Phase 2 R
suspended_high_and_race = (suspended_high_and_race / suspended_high_and_race.sum()) *100
print('Suspended in High School',suspended_high_and_race)
```

```
Suspended in Elementary School Phase 2 Race
Black/African American    35.294118
Latinx                     8.823529
Multi-Race                23.529412
Native American            2.941176
White                     29.411765
dtype: float64
Suspended in Middle School Phase 2 Race
Black/African American    34.177215
Latinx                     8.860759
```

```
Multi-Race                 21.518987
Native American             2.531646
White                      32.911392
dtype: float64
Suspended in High School Phase 2 Race
Black/African American     34.042553
Latinx                      7.446809
Multi-Race                 18.085106
Native American             2.127660
White                      38.297872
dtype: float64
```

In [58]:

```
suspended_elem_and_race_count = discipline[discipline['61.1'] == 'Suspended'].groupby('Pha
suspended_middle_and_race_count = discipline[discipline['61.2'] == 'Suspended'].groupby('P
suspended_high_and_race_count = discipline[discipline['61.3'] == 'Suspended'].groupby('Pha
print('Suspended in Elementary School',suspended_elem_and_race_count)
print('Suspended in Middle School',suspended_middle_and_race_count)
print('Suspended in High School',suspended_high_and_race_count)
```

```
Suspended in Elementary School Phase 2 Race
Black/African American     12
Latinx                      3
Multi-Race                  8
Native American             1
White                      10
dtype: int64
Suspended in Middle School Phase 2 Race
Black/African American     27
Latinx                      7
Multi-Race                 17
Native American             2
White                      26
dtype: int64
Suspended in High School Phase 2 Race
Black/African American     32
Latinx                      7
Multi-Race                 17
Native American             2
White                      36
dtype: int64
```

In [59]:

```
suspended_elem_and_race2.to_frame()
suspended_elem_and_race.to_frame()
suspended_elem_race = pd.concat([suspended_elem_and_race2,suspended_elem_and_race],axis=1)
suspended_elem_race.head()
```

Out[59]:

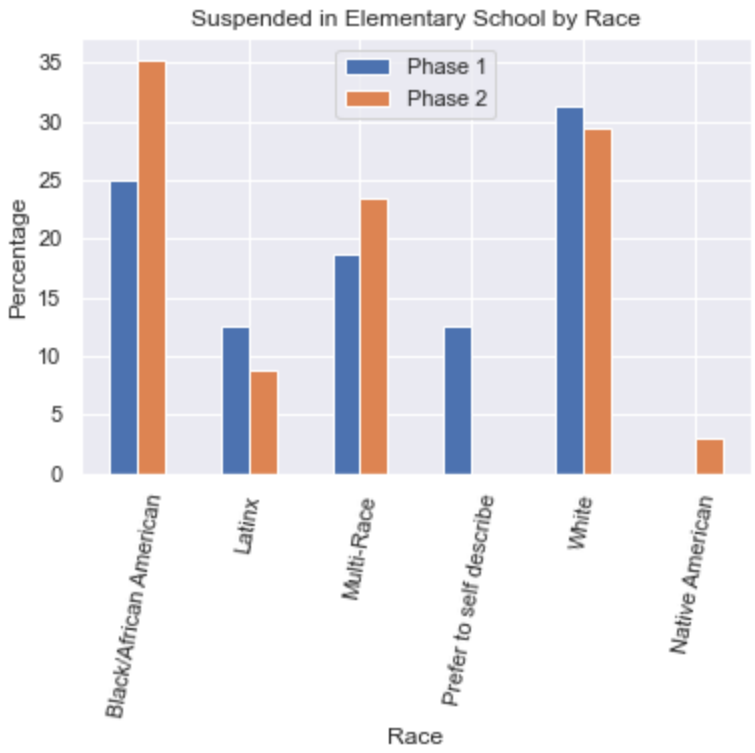
	0	1
Black/African American	25.00	35.294118
Latinx	12.50	8.823529
Multi-Race	18.75	23.529412
Prefer to self describe	12.50	NaN
White	31.25	29.411765

In [60]:

```
ax2 = suspended_elem_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
```

```
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in Elementary School by Race')
```

Out[60]:
```
Text(0.5, 1.0, 'Suspended in Elementary School by Race')
```



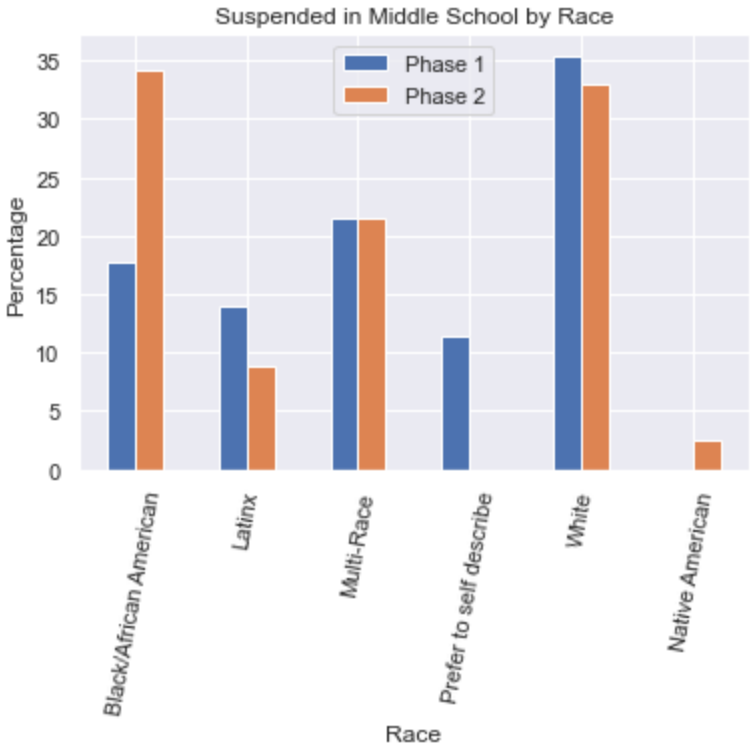
In [61]:
```
suspended_middle_and_race2.to_frame()
suspended_middle_and_race.to_frame()
suspended_middle_race = pd.concat([suspended_middle_and_race2,suspended_middle_and_race],a
suspended_middle_race.head()
```

Out[61]:

	0	1
Black/African American	17.721519	34.177215
Latinx	13.924051	8.860759
Multi-Race	21.518987	21.518987
Prefer to self describe	11.392405	NaN
White	35.443038	32.911392

In [62]:
```
ax2 = suspended_middle_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in Middle School by Race')
```

Out[62]:
```
Text(0.5, 1.0, 'Suspended in Middle School by Race')
```



In [63]:

```
suspended_high_and_race2.to_frame()
suspended_high_and_race.to_frame()
suspended_high_race = pd.concat([suspended_high_and_race2,suspended_high_and_race],axis=1)
suspended_high_race.head()
```

Out[63]:

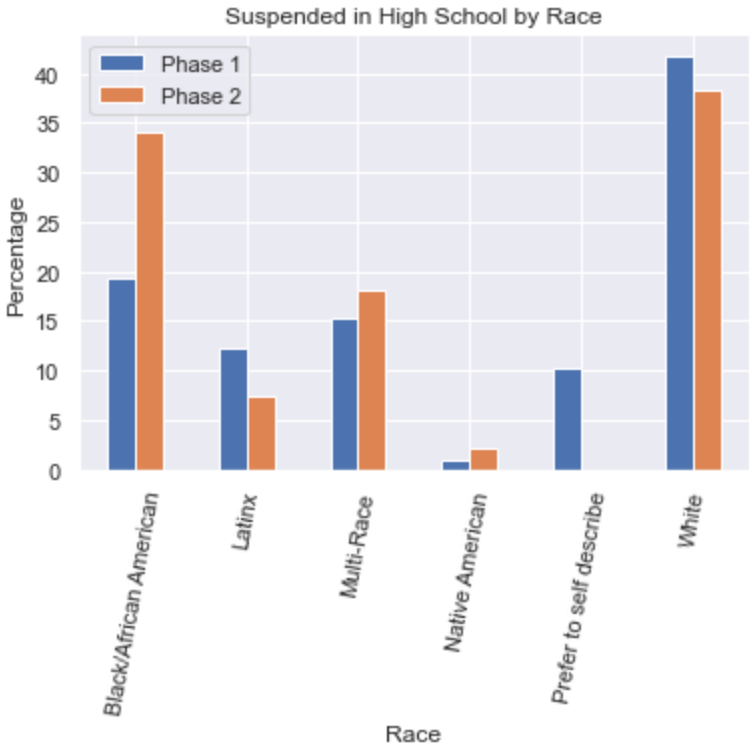
	0	1
Black/African American	19.387755	34.042553
Latinx	12.244898	7.446809
Multi-Race	15.306122	18.085106
Native American	1.020408	2.127660
Prefer to self describe	10.204082	NaN

In [64]:

```
ax2 = suspended_high_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in High School by Race')
```

Out[64]:

```
Text(0.5, 1.0, 'Suspended in High School by Race')
```

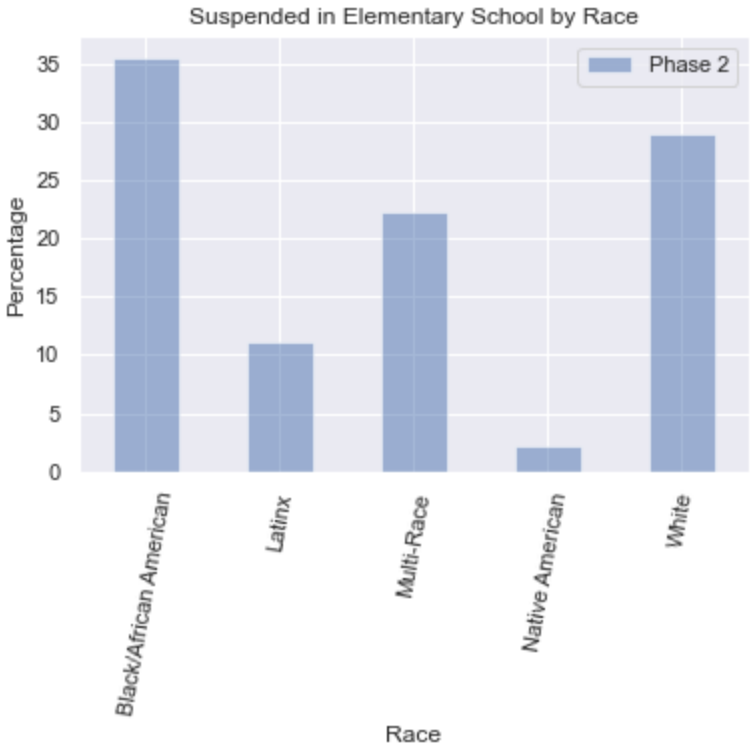


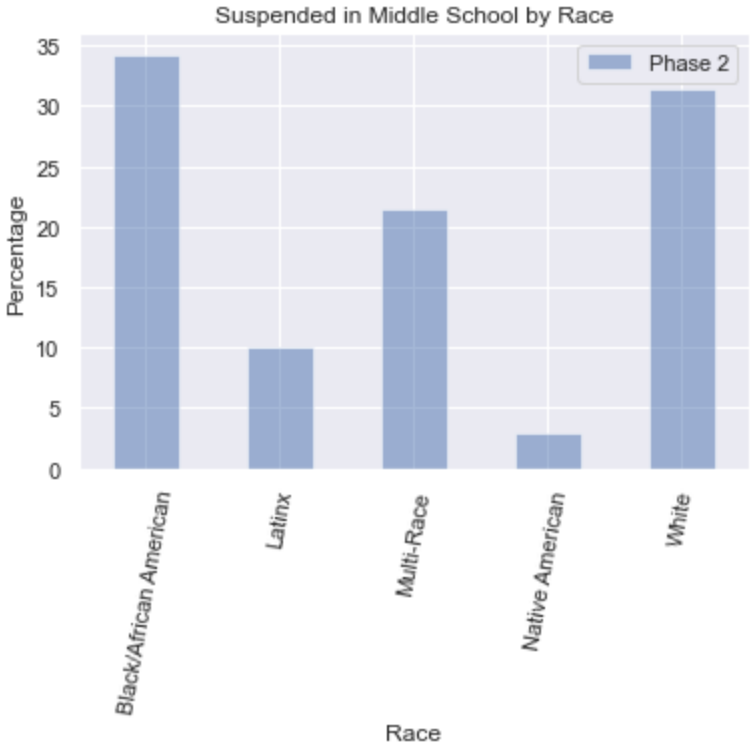
In [65]:

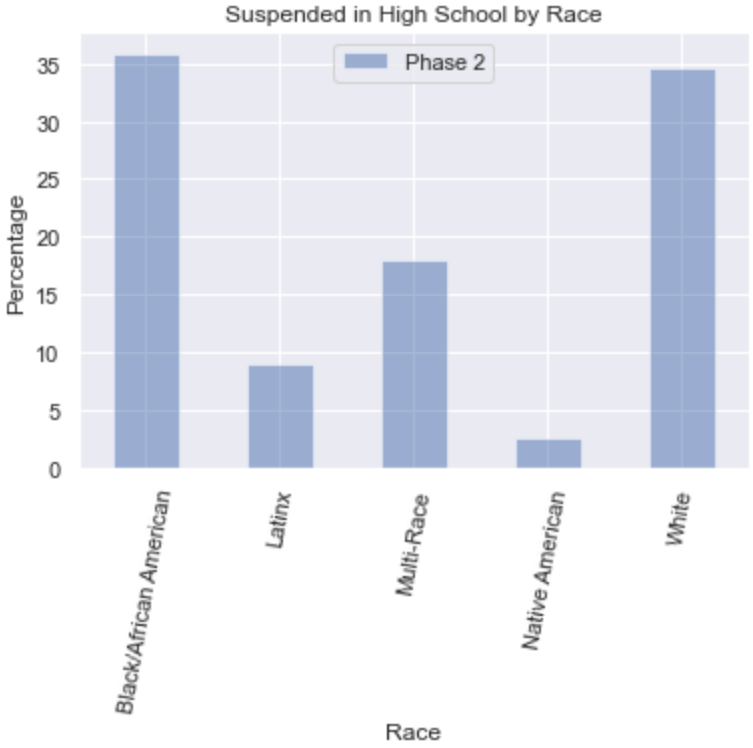
```
# suspended in elementary school by race
plt.subplot(1, 1, 1)
sent_home_elem_and_race.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Suspended in Elementary School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# suspended in middle school by race
plt.subplot(1,1,1)
sent_home_middle_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Suspended in Middle School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# suspended in high school by race
plt.subplot(1,1,1)
sent_home_high_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Suspended in High School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Suspended in Elementary School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race


Suspended in Middle School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race



4. Expelled by Race

In [66]:

```
# Phase 1
discipline2['62.1'] = discipline2['62.1'].replace(['yes','Yes'], 'Expelled')
# expelled and race combined values
expelled_elem_and_race2 = discipline2[discipline2['62.1'] == 'Expelled'].groupby('Phase 1
expelled_elem_and_race2 = (expelled_elem_and_race2 / expelled_elem_and_race2.sum()) *100
print('Expelled in Elementary School',expelled_elem_and_race2)

discipline2['62.2'] = discipline2['62.2'].replace(['yes','Yes'], 'Expelled')
# expelled and race combined values
expelled_middle_and_race2 = discipline2[discipline2['62.2'] == 'Expelled'].groupby('Phase
expelled_middle_and_race2 = (expelled_middle_and_race2 / expelled_middle_and_race2.sum())
print('Expelled in Middle School',expelled_middle_and_race2)

discipline2['62.3'] = discipline2['62.3'].replace(['yes','Yes'], 'Expelled')
# expelled and race combined values
expelled_high_and_race2 = discipline2[discipline2['62.3'] == 'Expelled'].groupby('Phase 1
expelled_high_and_race2 = (expelled_high_and_race2 / expelled_high_and_race2.sum()) *100
print('Expelled in High School',expelled_high_and_race2)
```

```
Expelled in Elementary School Phase 1 Race
Black/African American     21.052632
Latinx                     10.526316
Multi-Race                 26.315789
Prefer to self describe    15.789474
White                      26.315789
dtype: float64
Expelled in Middle School Phase 1 Race
Black/African American     30.555556
Latinx                     11.111111
Multi-Race                 22.222222
Prefer to self describe     8.333333
White                      27.777778
dtype: float64
Expelled in High School Phase 1 Race
Black/African American     22.857143
Latinx                     14.285714
Multi-Race                 11.428571
```

```
Native American             1.428571
Prefer to self describe     5.714286
White                      44.285714
dtype: float64
```

In [67]:

```
expelled_elem_and_race2_count = discipline2[discipline2['62.1'] == 'Expelled'].groupby('Ph
expelled_middle_and_race2_count = discipline2[discipline2['62.2'] == 'Expelled'].groupby('
expelled_high_and_race2_count = discipline2[discipline2['62.3'] == 'Expelled'].groupby('Ph
print('Expelled in Elementary School',expelled_elem_and_race2_count)
print('Expelled in Middle School',expelled_elem_and_race2_count)
print('Expelled in High School',expelled_elem_and_race2_count)
```

```
Expelled in Elementary School Phase 1 Race
Black/African American     4
Latinx                     2
Multi-Race                 5
Prefer to self describe    3
White                      5
dtype: int64
Expelled in Middle School Phase 1 Race
Black/African American     4
Latinx                     2
Multi-Race                 5
Prefer to self describe    3
White                      5
dtype: int64
Expelled in High School Phase 1 Race
Black/African American     4
Latinx                     2
Multi-Race                 5
Prefer to self describe    3
White                      5
dtype: int64
```

In [68]:

```
# Phase 2
discipline['62.1'] = discipline['62.1'].replace(['yes','Yes'], 'Expelled')
# expelled and race combined values
expelled_elem_and_race = discipline[discipline['62.1'] == 'Expelled'].groupby('Phase 2 Rac
expelled_elem_and_race = (expelled_elem_and_race / expelled_elem_and_race.sum()) *100
print('Expelled in Elementary School',expelled_elem_and_race)

discipline['62.2'] = discipline['62.2'].replace(['yes','Yes'], 'Expelled')
# expelled and race combined values
expelled_middle_and_race = discipline[discipline['62.2'] == 'Expelled'].groupby('Phase 2 R
expelled_middle_and_race = (expelled_middle_and_race / expelled_middle_and_race.sum()) *10
print('Expelled in Middle School',expelled_middle_and_race)

discipline['62.3'] = discipline['62.3'].replace(['yes','Yes'], 'Expelled')
# expelled and race combined values
expelled_high_and_race = discipline[discipline['62.3'] == 'Expelled'].groupby('Phase 2 Rac
expelled_high_and_race = (expelled_high_and_race / expelled_high_and_race.sum()) *100
print('Expelled in High School',expelled_high_and_race)
```

```
Expelled in Elementary School Phase 2 Race
Black/African American    41.666667
Latinx                    16.666667
Multi-Race                16.666667
Native American            8.333333
White                     16.666667
dtype: float64
Expelled in Middle School Phase 2 Race
Black/African American    13.333333
Latinx                    40.000000
Multi-Race                13.333333
```

```
Native American            6.666667
White                     26.666667
dtype: float64
Expelled in High School Phase 2 Race
Black/African American    31.428571
Latinx                    11.428571
Multi-Race                20.000000
Native American            2.857143
White                     34.285714
dtype: float64
```

In [69]:

```
expelled_elem_and_race_count = discipline[discipline['62.1'] == 'Expelled'].groupby('Phase
expelled_middle_and_race_count = discipline[discipline['62.2'] == 'Expelled'].groupby('Pha
expelled_high_and_race_count = discipline[discipline['62.3'] == 'Expelled'].groupby('Phase
print('Expelled in Elementary School',expelled_elem_and_race_count)
print('Expelled in Middle School',expelled_elem_and_race_count)
print('Expelled in High School',expelled_elem_and_race_count)
```

```
Expelled in Elementary School Phase 2 Race
Black/African American    5
Latinx                    2
Multi-Race                2
Native American           1
White                     2
dtype: int64
Expelled in Middle School Phase 2 Race
Black/African American    5
Latinx                    2
Multi-Race                2
Native American           1
White                     2
dtype: int64
Expelled in High School Phase 2 Race
Black/African American    5
Latinx                    2
Multi-Race                2
Native American           1
White                     2
dtype: int64
```

In [70]:

```
expelled_elem_and_race2.to_frame()
expelled_elem_and_race.to_frame()
expelled_elem_race = pd.concat([expelled_elem_and_race2,expelled_elem_and_race],axis=1)
expelled_elem_race.head()
```

Out[70]:

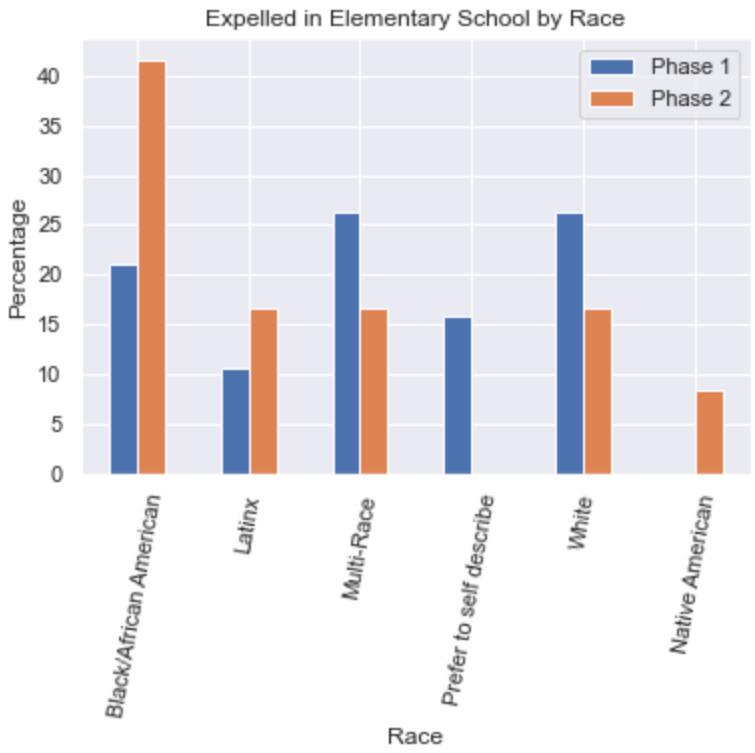
	0	1
Black/African American	21.052632	41.666667
Latinx	10.526316	16.666667
Multi-Race	26.315789	16.666667
Prefer to self describe	15.789474	NaN
White	26.315789	16.666667

In [71]:

```
ax2 = expelled_elem_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
```

```
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in Elementary School by Race')
```

Out[71]:
```
Text(0.5, 1.0, 'Expelled in Elementary School by Race')
```



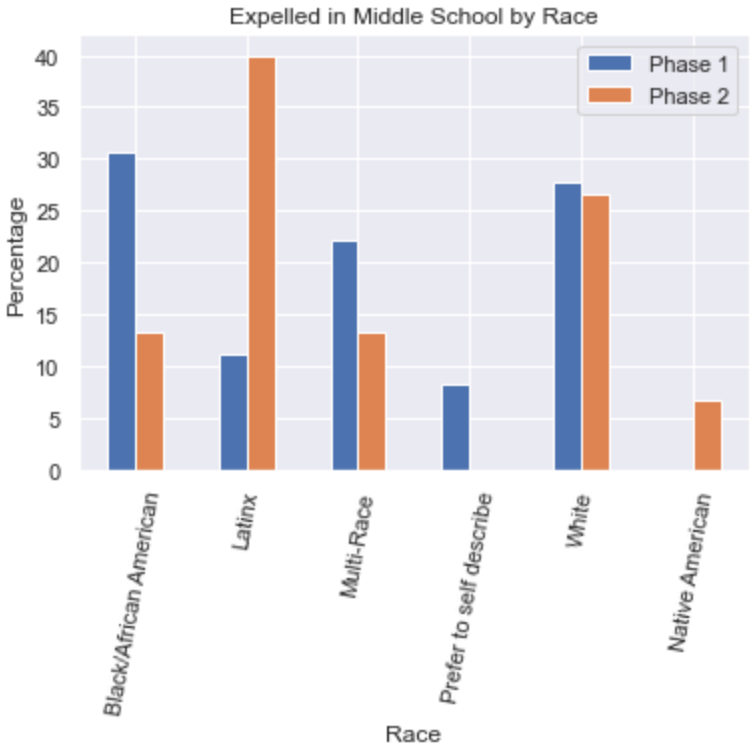
In [72]:
```
expelled_middle_and_race2.to_frame()
expelled_middle_and_race.to_frame()
expelled_middle_race = pd.concat([expelled_middle_and_race2,expelled_middle_and_race],axis
expelled_middle_race.head()
```

Out[72]:

	0	1
Black/African American	30.555556	13.333333
Latinx	11.111111	40.000000
Multi-Race	22.222222	13.333333
Prefer to self describe	8.333333	NaN
White	27.777778	26.666667

In [73]:
```
ax2 = expelled_middle_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in Middle School by Race')
```

Out[73]:
```
Text(0.5, 1.0, 'Expelled in Middle School by Race')
```



In [74]:

```
expelled_high_and_race2.to_frame()
expelled_high_and_race.to_frame()
expelled_high_race = pd.concat([expelled_high_and_race2,expelled_high_and_race],axis=1)
expelled_high_race.head()
```

Out[74]:

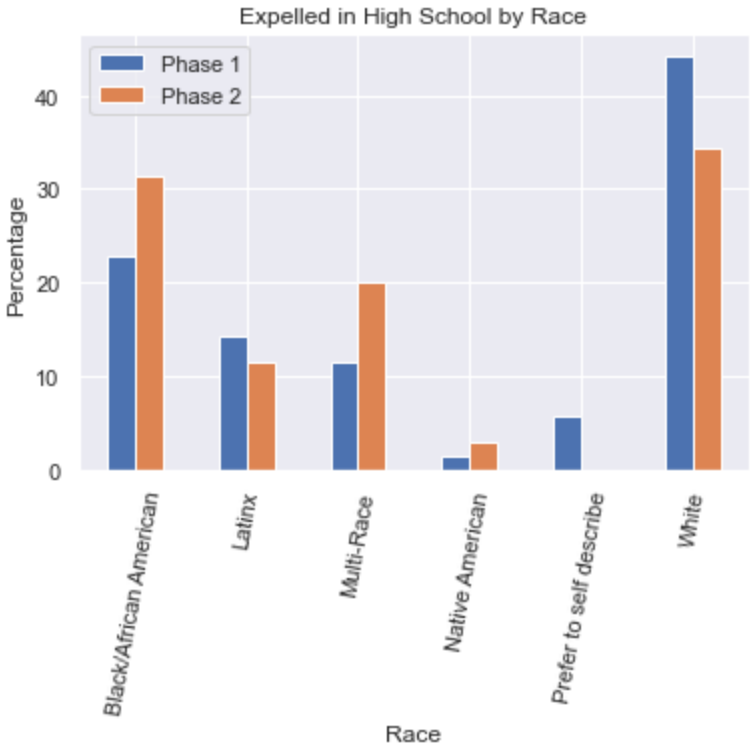
	0	1
Black/African American	22.857143	31.428571
Latinx	14.285714	11.428571
Multi-Race	11.428571	20.000000
Native American	1.428571	2.857143
Prefer to self describe	5.714286	NaN

In [75]:

```
ax2 = expelled_high_race.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in High School by Race')
```

Out[75]:

```
Text(0.5, 1.0, 'Expelled in High School by Race')
```

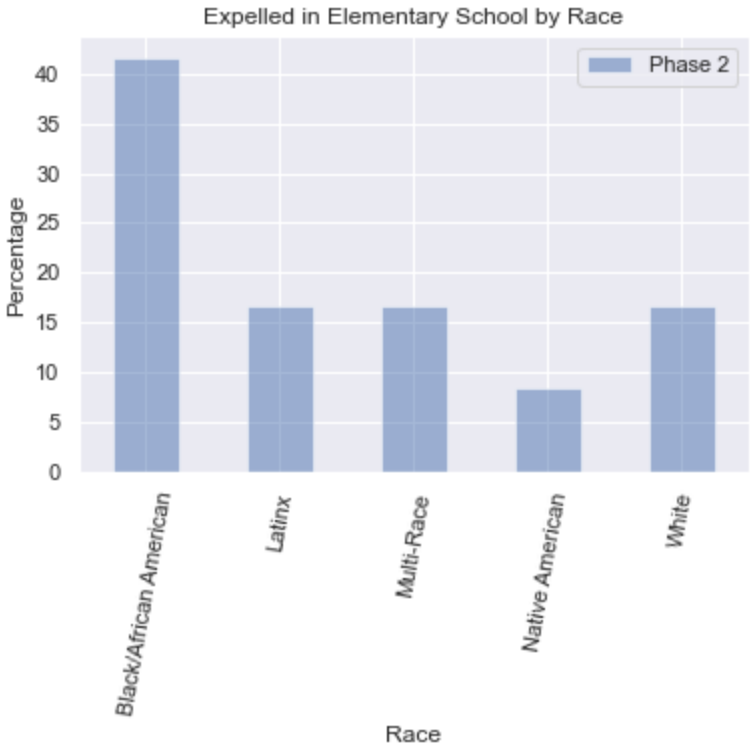


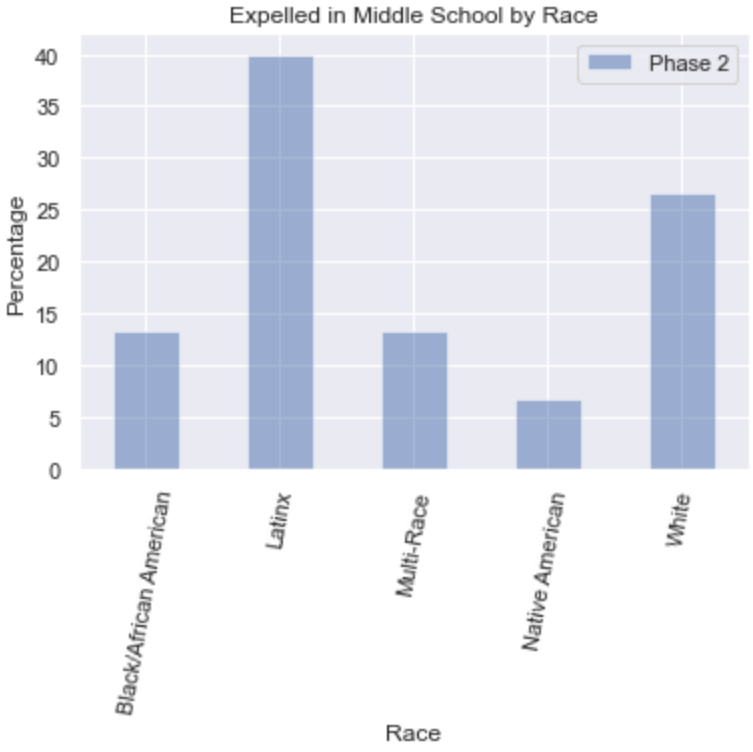
In [76]:

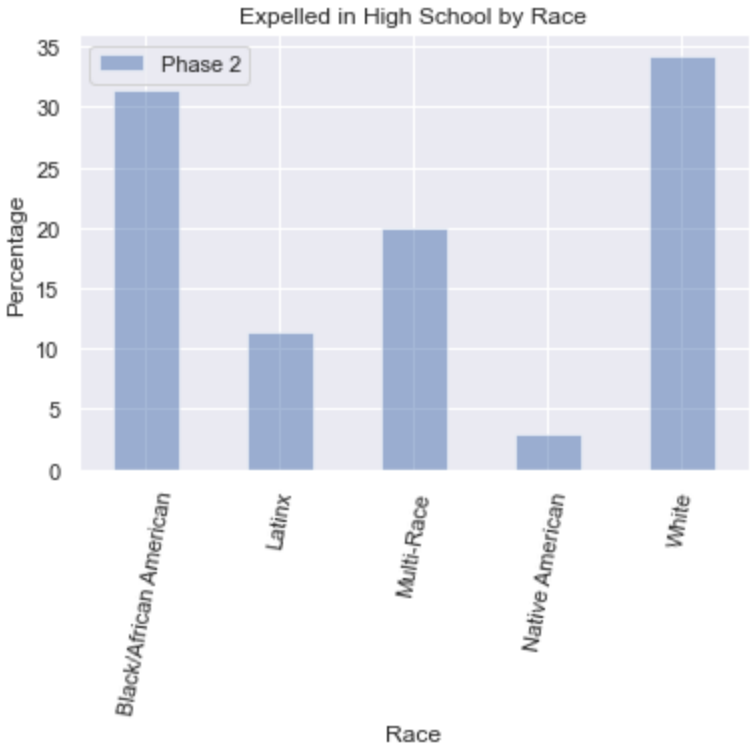
```
# expelled in elementary school by race
plt.subplot(1, 1, 1)
expelled_elem_and_race.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Expelled in Elementary School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# expelled in middle school by race
plt.subplot(1,1,1)
expelled_middle_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Expelled in Middle School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# expelled in high school by race
plt.subplot(1,1,1)
expelled_high_and_race.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Expelled in High School by Race')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Expelled in Elementary School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
Black/African American
Latinx
Multi-Race
Native American
White
Race


Expelled in Middle School by Race
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
Black/African American
Latinx
Multi-Race
Native American
White
Race



5. Kicked Out by Race and Gender

In [77]:

```
# Phase 1
discipline2['59.1'] = discipline2['59.1'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race gender combined values
kicked_out_elem_and_race_gender2 = discipline2[discipline2['59.1'] == 'Kicked Out'].groupb
kicked_out_elem_and_race_gender2 = (kicked_out_elem_and_race_gender2 / kicked_out_elem_and
print('Kicked Out Elementary School',kicked_out_elem_and_race_gender2)

discipline2['59.2'] = discipline2['59.2'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race gender combined values
kicked_out_middle_and_race_gender2 = discipline2[discipline2['59.2'] == 'Kicked Out'].grou
kicked_out_middle_and_race_gender2 = (kicked_out_middle_and_race_gender2 / kicked_out_midd
print('Kicked Out Middle School',kicked_out_middle_and_race_gender2)

discipline2['59.3'] = discipline2['59.3'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race gender combined values
kicked_out_high_and_race_gender2 = discipline2[discipline2['59.3'] == 'Kicked Out'].groupb
kicked_out_high_and_race_gender2 = (kicked_out_high_and_race_gender2 / kicked_out_high_and
print('Kicked Out High School',kicked_out_high_and_race_gender2)
```

```
Kicked Out Elementary School Phase 1 Race             Phase 1 Gender
Black/African American   Male               17.647059
Latinx                   Female              1.960784
                         Male               11.764706
Multi-Race               Female              1.960784
                         Male               17.647059
Prefer to self describe  Male               11.764706
White                    Female              5.882353
                         Male               31.372549
dtype: float64
Kicked Out Middle School Phase 1 Race             Phase 1 Gender
Black/African American   Female              4.000000
                         Male               14.666667
Latinx                   Female              1.333333
                         Male               12.000000
Multi-Race               Female              5.333333
                         Male               14.666667
Prefer to self describe  Female              1.333333
```

```
                          Male              12.000000
White                     Female             6.666667
                          Male              28.000000
dtype: float64
Kicked Out High School Phase 1 Race            Phase 1 Gender
Black/African American    Male              19.318182
Latinx                    Female             2.272727
                          Male              11.363636
Multi-Race                Female             4.545455
                          Male              12.500000
Native American           Female             1.136364
Prefer to self describe   Female             3.409091
                          Male               6.818182
White                     Female             7.954545
                          Male              30.681818
dtype: float64
```

In [78]:

```
kicked_out_elem_and_race_gender2_count = discipline2[discipline2['59.1'] == 'Kicked Out'].
kicked_out_middle_and_race_gender2_count = discipline2[discipline2['59.2'] == 'Kicked Out'
kicked_out_high_and_race_gender2_count = discipline2[discipline2['59.3'] == 'Kicked Out'].
print('Kicked Out Elementary School',kicked_out_elem_and_race_gender2_count)
print('Kicked Out Middle School',kicked_out_middle_and_race_gender2_count)
print('Kicked Out High School',kicked_out_high_and_race_gender2_count)
```

```
Kicked Out Elementary School Phase 1 Race            Phase 1 Gender
Black/African American    Male               9
Latinx                    Female             1
                          Male               6
Multi-Race                Female             1
                          Male               9
Prefer to self describe   Male               6
White                     Female             3
                          Male              16
dtype: int64
Kicked Out Middle School Phase 1 Race              Phase 1 Gender
Black/African American    Female             3
                          Male              11
Latinx                    Female             1
                          Male               9
Multi-Race                Female             4
                          Male              11
Prefer to self describe   Female             1
                          Male               9
White                     Female             5
                          Male              21
dtype: int64
Kicked Out High School Phase 1 Race            Phase 1 Gender
Black/African American    Male              17
Latinx                    Female             2
                          Male              10
Multi-Race                Female             4
                          Male              11
Native American           Female             1
Prefer to self describe   Female             3
                          Male               6
White                     Female             7
                          Male              27
dtype: int64
```

In [79]:

```
# Phase 2
discipline['59.1'] = discipline['59.1'].replace(['Often','A few times','Once','A few times
# kicked out of class and race gender combined values
kicked_out_elem_and_race_gender = discipline[discipline['59.1'] == 'Kicked Out'].groupby(
kicked_out_elem_and_race_gender = (kicked_out_elem_and_race_gender / kicked_out_elem_and_r
```

```
print('Kicked Out Elementary School',kicked_out_elem_and_race_gender)

discipline['59.2'] = discipline['59.2'].replace(['Often','A few times','Once','A few times
# kicked out of class and race gender combined values
kicked_out_middle_and_race_gender = discipline[discipline['59.2'] == 'Kicked Out'].groupby
kicked_out_middle_and_race_gender = (kicked_out_middle_and_race_gender / kicked_out_middle
print('Kicked Out Middle School',kicked_out_middle_and_race_gender)

discipline['59.3'] = discipline['59.3'].replace(['Often','A few times','Once','A few times
# kicked out of class and race gender combined values
kicked_out_high_and_race_gender = discipline[discipline['59.3'] == 'Kicked Out'].groupby(
kicked_out_high_and_race_gender = (kicked_out_high_and_race_gender / kicked_out_high_and_r
print('Kicked Out High School',kicked_out_high_and_race_gender)
```

```
Kicked Out Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Female                        2.127660
                        Male                         31.914894
Latinx                  Female                        2.127660
                        Male                         10.638298
Multi-Race              Female                        8.510638
                        Male                         12.765957
Native American         Female                        2.127660
White                   Female                       12.765957
                        Male                         14.893617
                        Prefer to self-describe:      2.127660
dtype: float64
Kicked Out Middle School Phase 2 Race            Phase 2 Gender
Black/African American  Female                        2.597403
                        Male                         31.168831
Latinx                  Female                        1.298701
                        Male                         10.389610
Multi-Race              Female                        9.090909
                        Male                         12.987013
Native American         Female                        2.597403
White                   Female                       15.584416
                        Male                         12.987013
                        Prefer to self-describe:      1.298701
dtype: float64
Kicked Out High School Phase 2 Race            Phase 2 Gender
Black/African American  Female                        5.952381
                        Male                         27.380952
Latinx                  Female                        2.380952
                        Male                          7.142857
Multi-Race              Female                       11.904762
                        Male                          7.142857
Native American         Female                        2.380952
White                   Female                       22.619048
                        Male                         11.904762
                        Prefer to self-describe:      1.190476
dtype: float64
```

In [80]:

```
kicked_out_elem_and_race_gender_count = discipline[discipline['59.1'] == 'Kicked Out'].gro
kicked_out_middle_and_race_gender_count = discipline[discipline['59.2'] == 'Kicked Out'].g
kicked_out_high_and_race_gender_count = discipline[discipline['59.3'] == 'Kicked Out'].gro
print('Kicked Out Elementary School',kicked_out_elem_and_race_gender_count)
print('Kicked Out Middle School',kicked_out_middle_and_race_gender_count)
print('Kicked Out High School',kicked_out_high_and_race_gender_count)
```

```
Kicked Out Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Female                        1
                        Male                         15
Latinx                  Female                        1
                        Male                          5
Multi-Race              Female                        4
                        Male                          6
```

```
Native American          Female                          1
White                    Female                          6
                         Male                            7
                         Prefer to self-describe:        1
dtype: int64
Kicked Out Middle School Phase 2 Race             Phase 2 Gender
Black/African American   Female                          2
                         Male                           24
Latinx                   Female                          1
                         Male                            8
Multi-Race               Female                          7
                         Male                           10
Native American          Female                          2
White                    Female                         12
                         Male                           10
                         Prefer to self-describe:        1
dtype: int64
Kicked Out High School Phase 2 Race             Phase 2 Gender
Black/African American   Female                          5
                         Male                           23
Latinx                   Female                          2
                         Male                            6
Multi-Race               Female                         10
                         Male                            6
Native American          Female                          2
White                    Female                         19
                         Male                           10
                         Prefer to self-describe:        1
dtype: int64
```

In [81]:

```
kicked_out_elem_and_race_gender2.to_frame()
kicked_out_elem_and_race_gender.to_frame()
kicked_out_elem = pd.concat([kicked_out_elem_and_race_gender2,kicked_out_elem_and_race_ger
kicked_out_elem.head()
```

Out[81]:

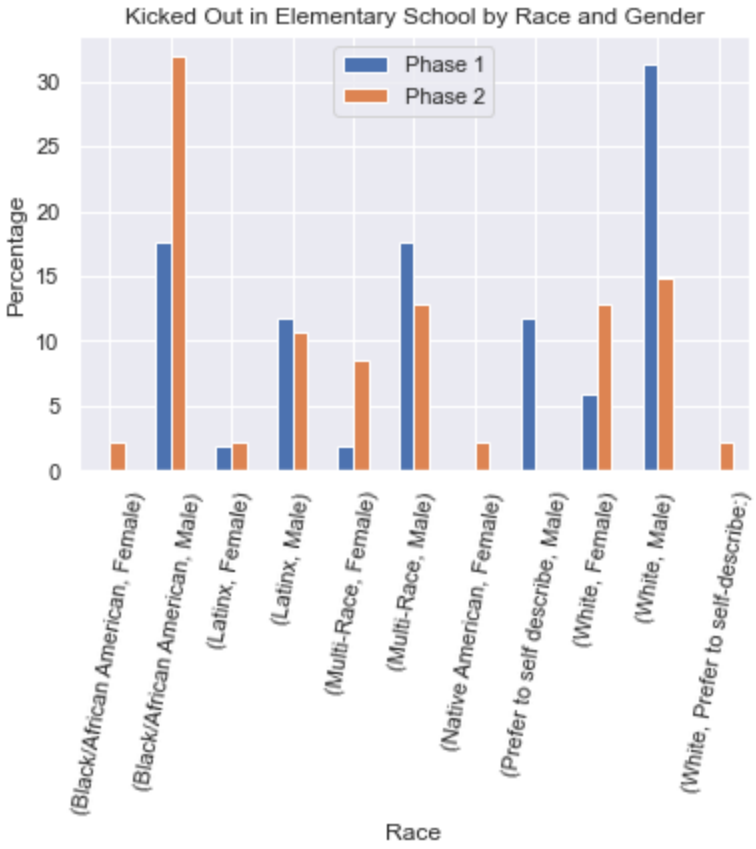
		0	1
Black/African American	**Female**	NaN	2.127660
	Male	17.647059	31.914894
Latinx	**Female**	1.960784	2.127660
	Male	11.764706	10.638298
Multi-Race	**Female**	1.960784	8.510638

In [82]:

```
ax2 = kicked_out_elem.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked Out in Elementary School by Race and Gender')
```

Out[82]:

```
Text(0.5, 1.0, 'Kicked Out in Elementary School by Race and Gender')
```



In [83]:

```
kicked_out_middle_and_race_gender2.to_frame()
kicked_out_middle_and_race_gender.to_frame()
kicked_out_middle = pd.concat([kicked_out_middle_and_race_gender2,kicked_out_middle_and_ra
kicked_out_middle.head()
```

Out[83]:

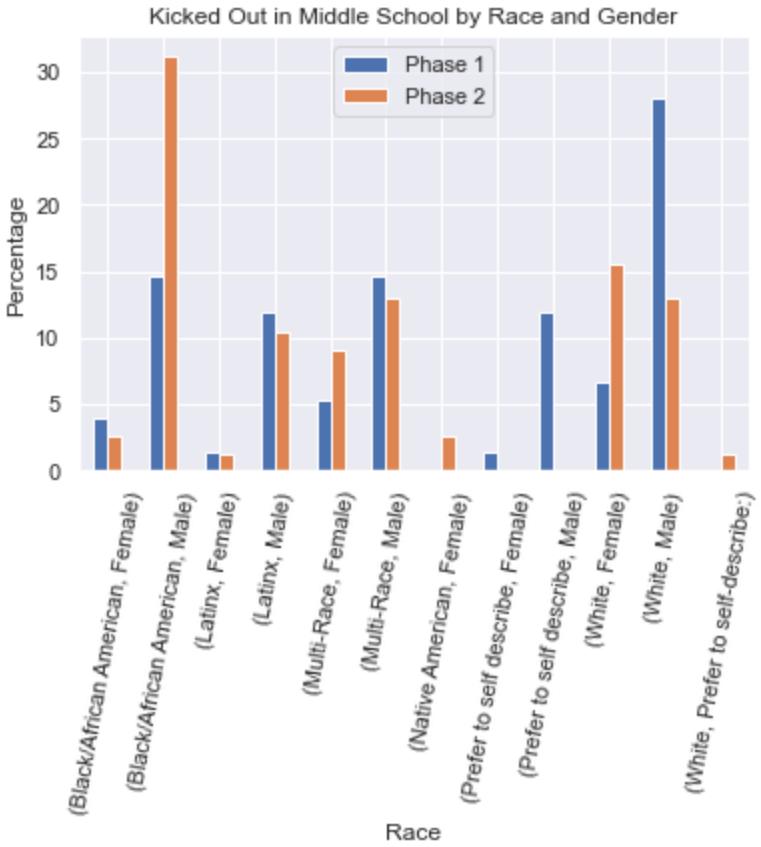
		0	1
Black/African American	**Female**	4.000000	2.597403
	Male	14.666667	31.168831
Latinx	**Female**	1.333333	1.298701
	Male	12.000000	10.389610
Multi-Race	**Female**	5.333333	9.090909

In [84]:

```
ax2 = kicked_out_middle.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked Out in Middle School by Race and Gender')
```

Out[84]:

```
Text(0.5, 1.0, 'Kicked Out in Middle School by Race and Gender')
```



In [85]:

```
kicked_out_high_and_race_gender2.to_frame()
kicked_out_high_and_race_gender.to_frame()
kicked_out_high = pd.concat([kicked_out_high_and_race_gender2,kicked_out_high_and_race_ger
kicked_out_high.head()
```

Out[85]:

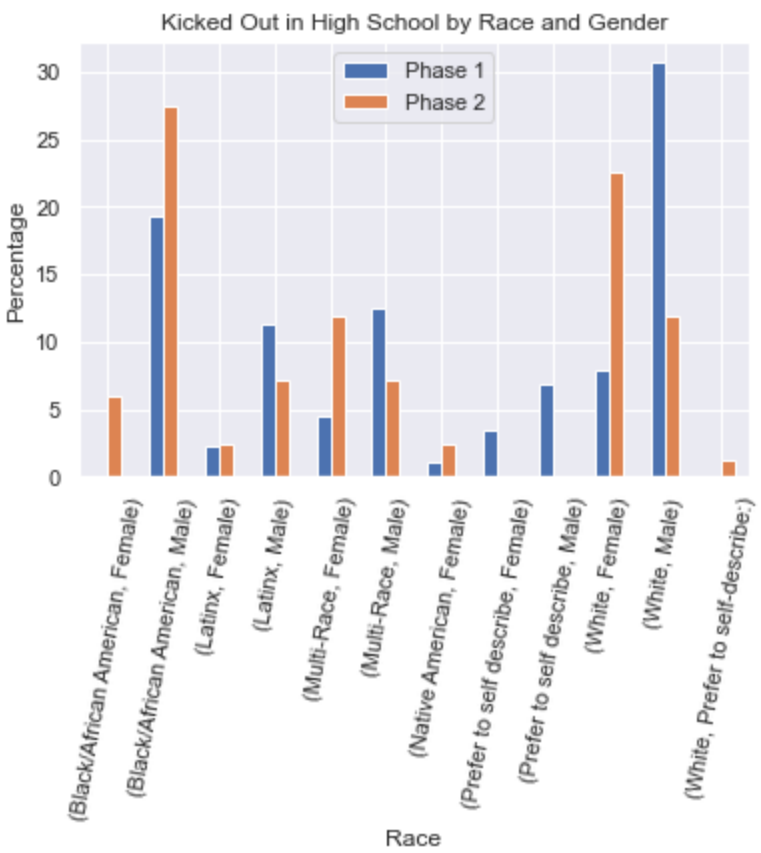
		0	1
Black/African American	**Female**	NaN	5.952381
	Male	19.318182	27.380952
Latinx	**Female**	2.272727	2.380952
	Male	11.363636	7.142857
Multi-Race	**Female**	4.545455	11.904762

In [86]:

```
ax2 = kicked_out_high.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked Out in High School by Race and Gender')
```

Out[86]:

```
Text(0.5, 1.0, 'Kicked Out in High School by Race and Gender')
```

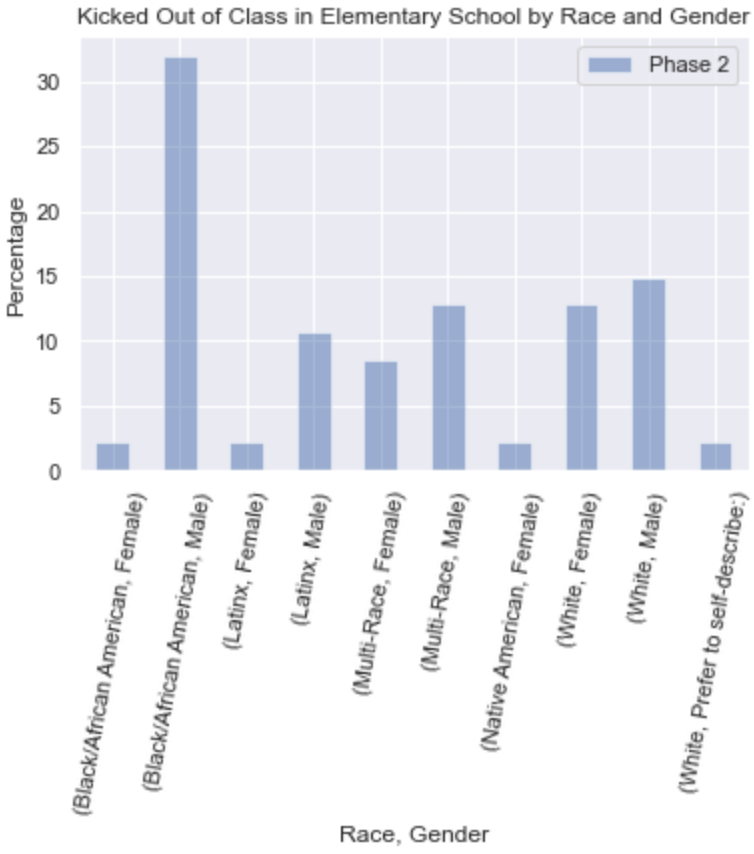


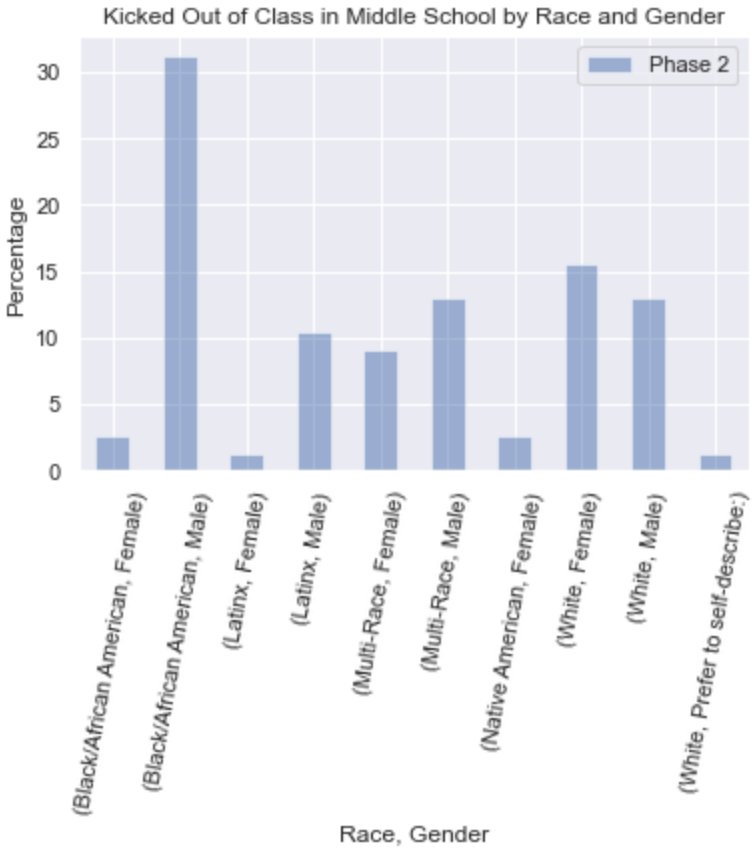
In [87]:

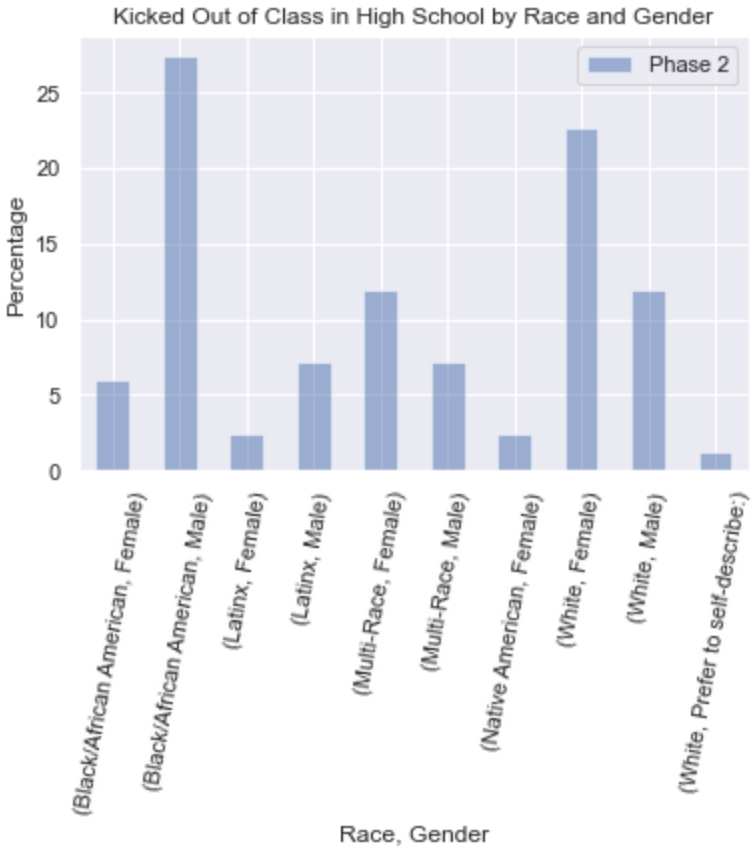
```
# kicked out of class in elementary school by race and gender
plt.subplot(1, 1, 1)
kicked_out_elem_and_race_gender.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in Elementary School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# kicked out of class in middle school by race and gender
plt.subplot(1,1,1)
kicked_out_middle_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in Middle School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# kicked out of class in high school by race and gender
plt.subplot(1,1,1)
kicked_out_high_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in High School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Kicked Out of Class in Elementary School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
(Black/African American, Female)
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
(White, Prefer to self-describe:)
Race, Gender


Kicked Out of Class in Middle School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
(Black/African American, Female)
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
(White, Prefer to self-describe:)
Race, Gender



6. Sent Home by Race and Gender

In [98]:

```
# Phase 1
discipline2['60.1'] = discipline2['60.1'].replace(['Often','A few times','Once','A few tir
# sent home and race gender combined values
sent_home_elem_and_race_gender2 = discipline2[discipline2['60.1'] == 'Sent Home'].groupby
sent_home_elem_and_race_gender2 = (sent_home_elem_and_race_gender2 / sent_home_elem_and_ra
print('Sent Home Elementary School',sent_home_elem_and_race_gender2)

discipline2['60.2'] = discipline2['60.2'].replace(['Often','A few times','Once','A few tir
# sent home and race gender combined values
sent_home_middle_and_race_gender2 = discipline2[discipline2['60.2'] == 'Sent Home'].groupb
sent_home_middle_and_race_gender2 = (sent_home_middle_and_race_gender2 / sent_home_middle_
print('Sent Home Middle School',sent_home_middle_and_race_gender2)

discipline2['60.3'] = discipline2['60.3'].replace(['Often','A few times','Once','A few tir
# sent home and race gender combined values
sent_home_high_and_race_gender2 = discipline2[discipline2['60.3'] == 'Sent Home'].groupby
sent_home_high_and_race_gender2 = (sent_home_high_and_race_gender2 / sent_home_high_and_ra
print('Sent Home High School',sent_home_high_and_race_gender2)
```

```
Sent Home Elementary School Phase 1 Race             Phase 1 Gender
Black/African American   Male              19.565217
Latinx                   Male              13.043478
Multi-Race               Female             2.173913
                         Male              21.739130
Prefer to self describe  Female             2.173913
                         Male               8.695652
White                    Female             6.521739
                         Male              26.086957
dtype: float64
Sent Home Middle School Phase 1 Race             Phase 1 Gender
Black/African American   Female             2.898551
                         Male              18.840580
Latinx                   Male              10.144928
Multi-Race               Female             4.347826
```

```
                          Male              15.942029
Prefer to self describe   Female             1.449275
                          Male              10.144928
White                     Female             8.695652
                          Male              27.536232
dtype: float64
Sent Home High School Phase 1 Race            Phase 1 Gender
Black/African American    Female             2.298851
                          Male              18.390805
Latinx                    Female             1.149425
                          Male              11.494253
Multi-Race                Female             4.597701
                          Male              10.344828
Native American           Female             1.149425
Prefer to self describe   Female             2.298851
                          Male               8.045977
White                     Female             6.896552
                          Male              33.333333
dtype: float64
```

In [99]:

```
sent_home_elem_and_race_gender2_count = discipline2[discipline2['60.1'] == 'Sent Home'].gr
sent_home_middle_and_race_gender2_count = discipline2[discipline2['60.2'] == 'Sent Home'].
sent_home_high_and_race_gender2_count = discipline2[discipline2['60.3'] == 'Sent Home'].gr
print('Sent Home Elementary School',sent_home_elem_and_race_gender2_count)
print('Sent Home Middle School',sent_home_middle_and_race_gender2_count)
print('Sent Home High School',sent_home_high_and_race_gender2_count)
```

```
Sent Home Elementary School Phase 1 Race            Phase 1 Gender
Black/African American    Male                9
Latinx                    Male                6
Multi-Race                Female              1
                          Male               10
Prefer to self describe   Female              1
                          Male                4
White                     Female              3
                          Male               12
dtype: int64
Sent Home Middle School Phase 1 Race            Phase 1 Gender
Black/African American    Female              2
                          Male               13
Latinx                    Male                7
Multi-Race                Female              3
                          Male               11
Prefer to self describe   Female              1
                          Male                7
White                     Female              6
                          Male               19
dtype: int64
Sent Home High School Phase 1 Race            Phase 1 Gender
Black/African American    Female              2
                          Male               16
Latinx                    Female              1
                          Male               10
Multi-Race                Female              4
                          Male                9
Native American           Female              1
Prefer to self describe   Female              2
                          Male                7
White                     Female              6
                          Male               29
dtype: int64
```

In [100…

```
# Phase 2
discipline['60.1'] = discipline['60.1'].replace(['Often','A few times','Once','A few times
```

```
# sent home and race gender combined values
sent_home_elem_and_race_gender = discipline[discipline['60.1'] == 'Sent Home'].groupby(['R
sent_home_elem_and_race_gender = (sent_home_elem_and_race_gender / sent_home_elem_and_race
print('Sent Home Elementary School',sent_home_elem_and_race_gender)

discipline['60.2'] = discipline['60.2'].replace(['Often','A few times','Once','A few times
# sent home and race gender combined values
sent_home_middle_and_race_gender = discipline[discipline['60.2'] == 'Sent Home'].groupby(
sent_home_middle_and_race_gender = (sent_home_middle_and_race_gender / sent_home_middle_ar
print('Sent Home Middle School',sent_home_middle_and_race_gender)

discipline['60.3'] = discipline['60.3'].replace(['Often','A few times','Once','A few times
# sent home and race gender combined values
sent_home_high_and_race_gender = discipline[discipline['60.3'] == 'Sent Home'].groupby(['R
sent_home_high_and_race_gender = (sent_home_high_and_race_gender / sent_home_high_and_race
print('Sent Home High School',sent_home_high_and_race_gender)
```

```
Sent Home Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Male                        35.555556
Latinx                  Female                       2.222222
                        Male                         8.888889
Multi-Race              Female                      11.111111
                        Male                        11.111111
Native American         Female                       2.222222
White                   Female                      11.111111
                        Male                        13.333333
                        Prefer to self-describe:     4.444444
dtype: float64
Sent Home Middle School Phase 2 Race            Phase 2 Gender
Black/African American  Female                       1.428571
                        Male                        32.857143
Latinx                  Female                       1.428571
                        Male                         8.571429
Multi-Race              Female                       8.571429
                        Male                        12.857143
Native American         Female                       2.857143
White                   Female                      12.857143
                        Male                        15.714286
                        Prefer to self-describe:     2.857143
dtype: float64
Sent Home High School Phase 2 Race            Phase 2 Gender
Black/African American  Female                       5.128205
                        Male                        30.769231
Latinx                  Female                       3.846154
                        Male                         5.128205
Multi-Race              Female                      12.820513
                        Male                         5.128205
Native American         Female                       2.564103
White                   Female                      23.076923
                        Male                        10.256410
                        Prefer to self-describe:     1.282051
dtype: float64
```

In [101…

```
sent_home_elem_and_race_gender_count = discipline[discipline['60.1'] == 'Sent Home'].group
sent_home_middle_and_race_gender_count = discipline[discipline['60.2'] == 'Sent Home'].gro
sent_home_high_and_race_gender_count = discipline[discipline['60.3'] == 'Sent Home'].group
print('Sent Home Elementary School',sent_home_elem_and_race_gender_count)
print('Sent Home Middle School',sent_home_middle_and_race_gender_count)
print('Sent Home High School',sent_home_high_and_race_gender_count)
```

```
Sent Home Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Male                        16
Latinx                  Female                       1
                        Male                         4
Multi-Race              Female                       5
```

```
                          Male                            5
Native American           Female                          1
White                     Female                          5
                          Male                            6
                          Prefer to self-describe:        2
dtype: int64
Sent Home Middle School Phase 2 Race             Phase 2 Gender
Black/African American  Female                          1
                          Male                           23
Latinx                    Female                          1
                          Male                            6
Multi-Race                Female                          6
                          Male                            9
Native American           Female                          2
White                     Female                          9
                          Male                           11
                          Prefer to self-describe:        2
dtype: int64
Sent Home High School Phase 2 Race             Phase 2 Gender
Black/African American  Female                          4
                          Male                           24
Latinx                    Female                          3
                          Male                            4
Multi-Race                Female                         10
                          Male                            4
Native American           Female                          2
White                     Female                         18
                          Male                            8
                          Prefer to self-describe:        1
dtype: int64
```

In [102…

```
sent_home_elem_and_race_gender2.to_frame()
sent_home_elem_and_race_gender.to_frame()
sent_home_elem = pd.concat([sent_home_elem_and_race_gender2,sent_home_elem_and_race_gender
sent_home_elem.head()
```

Out[102…

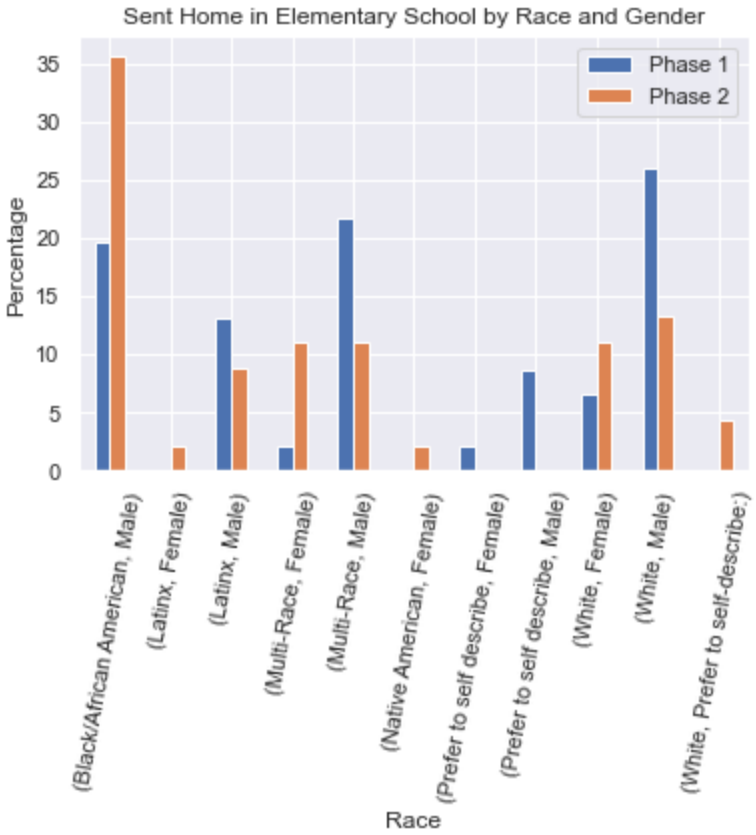
		0	1
Black/African American	**Male**	19.565217	35.555556
Latinx	**Female**	NaN	2.222222
	Male	13.043478	8.888889
Multi-Race	**Female**	2.173913	11.111111
	Male	21.739130	11.111111

In [93]:

```
ax2 = sent_home_elem.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in Elementary School by Race and Gender')
```

Out[93]:

```
Text(0.5, 1.0, 'Sent Home in Elementary School by Race and Gender')
```



In [94]:

```
sent_home_middle_and_race_gender2.to_frame()
sent_home_middle_and_race_gender.to_frame()
sent_home_middle = pd.concat([sent_home_middle_and_race_gender2,sent_home_middle_and_race_
sent_home_middle.head()
```

Out[94]:

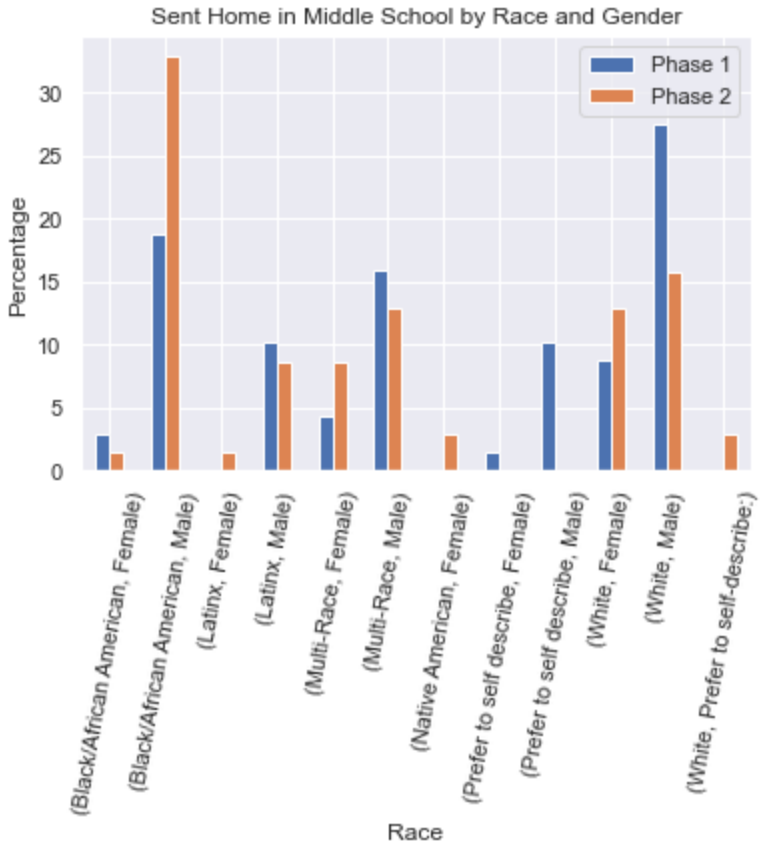
		0	1
Black/African American	**Female**	2.898551	1.428571
	Male	18.840580	32.857143
Latinx	**Female**	NaN	1.428571
	Male	10.144928	8.571429
Multi-Race	**Female**	4.347826	8.571429

In [95]:

```
ax2 = sent_home_middle.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in Middle School by Race and Gender')
```

Out[95]:

```
Text(0.5, 1.0, 'Sent Home in Middle School by Race and Gender')
```



In [103…

```
sent_home_high_and_race_gender2.to_frame()
sent_home_high_and_race_gender.to_frame()
sent_home_high = pd.concat([sent_home_high_and_race_gender2,sent_home_high_and_race_gender
sent_home_high.head()
```

Out[103…

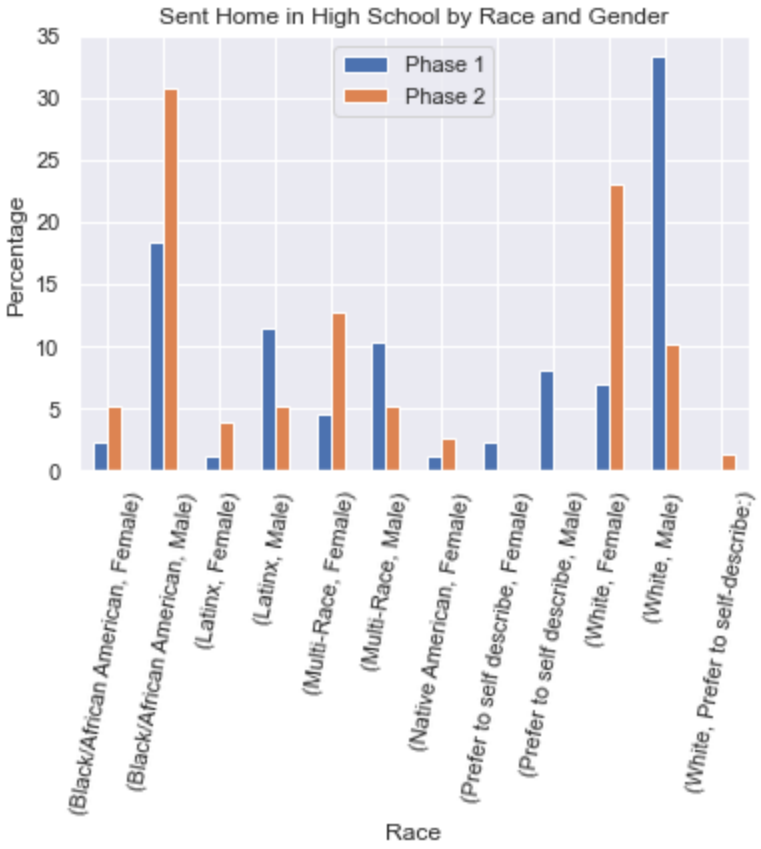
		0	1
Black/African American	**Female**	2.298851	5.128205
	Male	18.390805	30.769231
Latinx	**Female**	1.149425	3.846154
	Male	11.494253	5.128205
Multi-Race	**Female**	4.597701	12.820513

In [104…

```
ax2 = sent_home_high.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in High School by Race and Gender')
```

Out[104…

```
Text(0.5, 1.0, 'Sent Home in High School by Race and Gender')
```

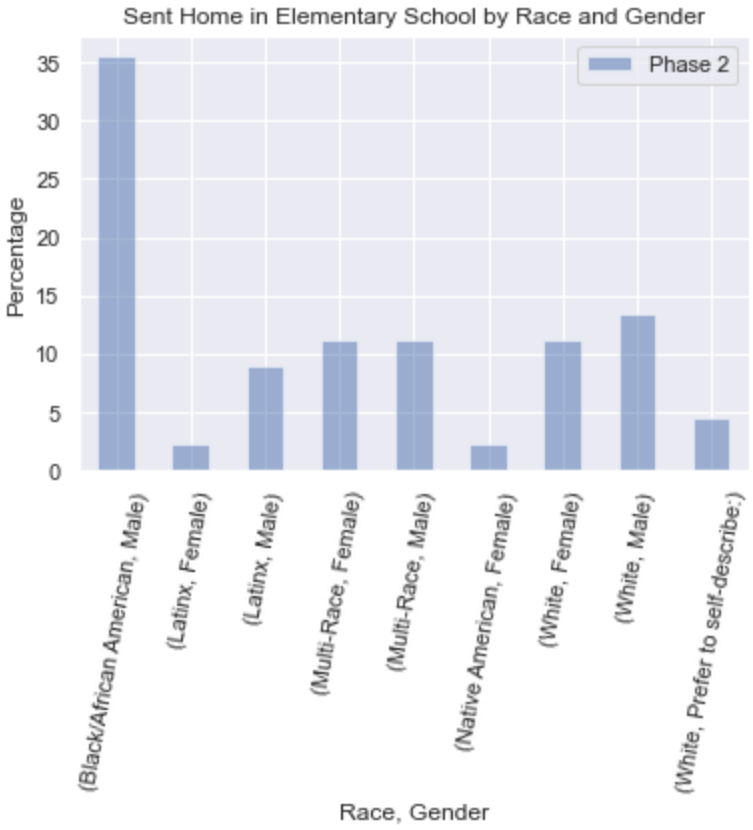


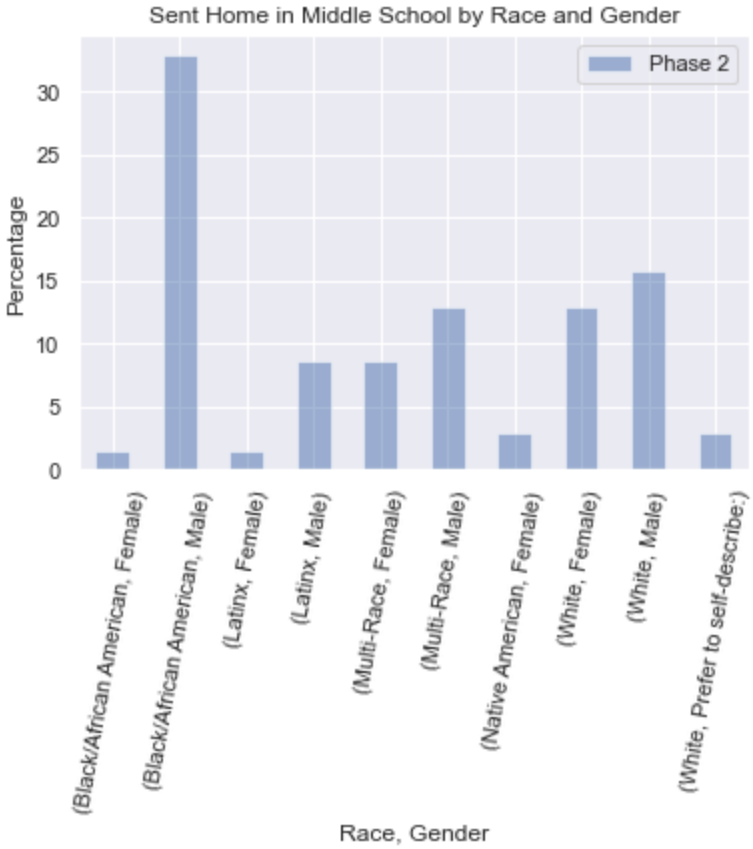
In [105…

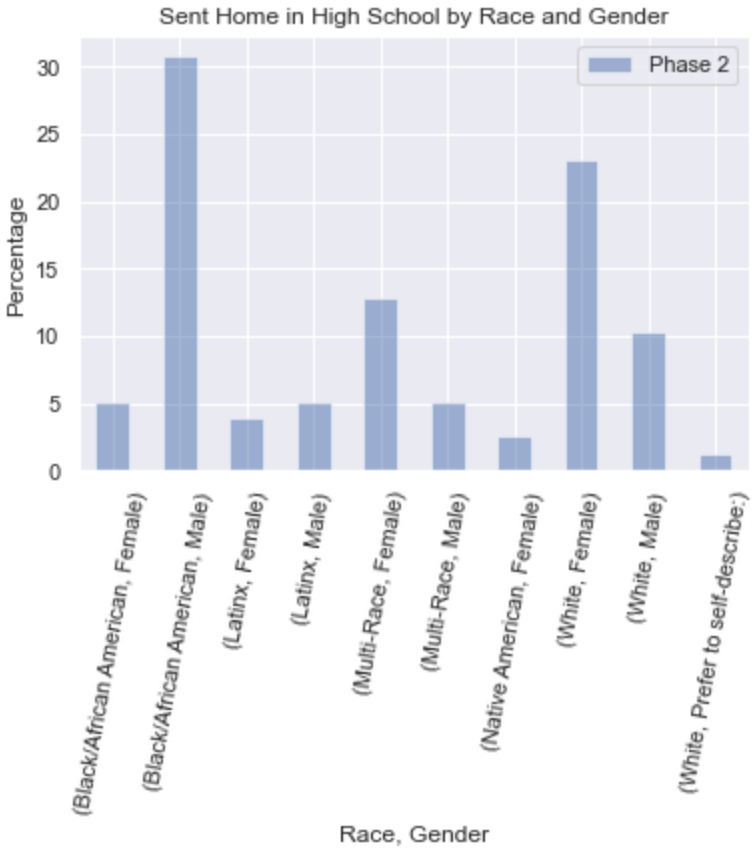
```
# sent home in elementary school by race and gender
plt.subplot(1, 1, 1)
sent_home_elem_and_race_gender.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Sent Home in Elementary School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# sent home in middle school by race and gender
plt.subplot(1,1,1)
sent_home_middle_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Sent Home in Middle School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# sent home in high school by race and gender
plt.subplot(1,1,1)
sent_home_high_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Sent Home in High School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Sent Home in Elementary School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
35
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
(White, Prefer to self-describe:)
Race, Gender


Sent Home in Middle School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
(Black/African American, Female)
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
(White, Prefer to self-describe:)
Race, Gender



7. Suspended by Race and Gender

In [106…

```
# Phase 1
discipline2['61.1'] = discipline2['61.1'].replace(['Often','A few times','Once','A few tir
# suspended and race gender combined values
suspended_elem_and_race_gender2 = discipline2[discipline2['61.1'] == 'Suspended'].groupby
suspended_elem_and_race_gender2 = (suspended_elem_and_race_gender2 / suspended_elem_and_ra
print('Suspended in Elementary School',suspended_elem_and_race_gender2)

discipline2['61.2'] = discipline2['61.2'].replace(['Often','A few times','Once','A few tir
# suspended and race gender combined values
suspended_middle_and_race_gender2 = discipline2[discipline2['61.2'] == 'Suspended'].groupb
suspended_middle_and_race_gender2 = (suspended_middle_and_race_gender2 / suspended_middle_
print('Suspended in Middle School',suspended_middle_and_race_gender2)

discipline2['61.3'] = discipline2['61.3'].replace(['Often','A few times','Once','A few tir
# suspended and race gender combined values
suspended_high_and_race_gender2 = discipline2[discipline2['61.3'] == 'Suspended'].groupby
suspended_high_and_race_gender2 = (suspended_high_and_race_gender2 / suspended_high_and_ra
print('Suspended in High School',suspended_high_and_race_gender2)
```

```
Suspended in Elementary School Phase 1 Race             Phase 1 Gender
Black/African American   Male              25.000
Latinx                   Male              12.500
Multi-Race               Male              18.750
Prefer to self describe  Female             3.125
                         Male              9.375
White                    Female            6.250
                         Male              25.000
dtype: float64
Suspended in Middle School Phase 1 Race             Phase 1 Gender
Black/African American   Female            2.531646
                         Male              15.189873
Latinx                   Female            1.265823
                         Male              12.658228
Multi-Race               Female            5.063291
```

```
                          Male              16.455696
Prefer to self describe   Female             3.797468
                          Male               7.594937
White                     Female             7.594937
                          Male              27.848101
dtype: float64
Suspended in High School  Phase 1 Race              Phase 1 Gender
Black/African American    Female             2.040816
                          Male              17.346939
Latinx                    Female             2.040816
                          Male              10.204082
Multi-Race                Female             5.102041
                          Male              10.204082
Native American           Female             1.020408
Prefer to self describe   Female             3.061224
                          Male               7.142857
White                     Female             9.183673
                          Male              32.653061
dtype: float64
```

In [107…

```
suspended_elem_and_race_gender2_count = discipline2[discipline2['61.1'] == 'Suspended'].gr
suspended_middle_and_race_gender2_count = discipline2[discipline2['61.2'] == 'Suspended'].
suspended_high_and_race_gender2_count = discipline2[discipline2['61.3'] == 'Suspended'].gr
print('Suspended in Elementary School',suspended_elem_and_race_gender2_count)
print('Suspended in Middle School',suspended_middle_and_race_gender2_count)
print('Suspended in High School',suspended_high_and_race_gender2_count)
```

```
Suspended in Elementary School Phase 1 Race              Phase 1 Gender
Black/African American    Male               8
Latinx                    Male               4
Multi-Race                Male               6
Prefer to self describe   Female             1
                          Male               3
White                     Female             2
                          Male               8
dtype: int64
Suspended in Middle School Phase 1 Race             Phase 1 Gender
Black/African American    Female             2
                          Male              12
Latinx                    Female             1
                          Male              10
Multi-Race                Female             4
                          Male              13
Prefer to self describe   Female             3
                          Male               6
White                     Female             6
                          Male              22
dtype: int64
Suspended in High School  Phase 1 Race              Phase 1 Gender
Black/African American    Female             2
                          Male              17
Latinx                    Female             2
                          Male              10
Multi-Race                Female             5
                          Male              10
Native American           Female             1
Prefer to self describe   Female             3
                          Male               7
White                     Female             9
                          Male              32
dtype: int64
```

In [108…

```
# Phase 2
discipline['61.1'] = discipline['61.1'].replace(['Often','A few times','Once','A few times
```

```
# suspended and race gender combined values
suspended_elem_and_race_gender = discipline[discipline['61.1'] == 'Suspended'].groupby(['P
suspended_elem_and_race_gender = (suspended_elem_and_race_gender / suspended_elem_and_race
print('Suspended in Elementary School',suspended_elem_and_race_gender)

discipline['61.2'] = discipline['61.2'].replace(['Often','A few times','Once','A few times
# suspended and race gender combined values
suspended_middle_and_race_gender = discipline[discipline['61.2'] == 'Suspended'].groupby(
suspended_middle_and_race_gender = (suspended_middle_and_race_gender / suspended_middle_ar
print('Suspended in Middle School',suspended_middle_and_race_gender)

discipline['61.3'] = discipline['61.3'].replace(['Often','A few times','Once','A few times
# suspended and race gender combined values
suspended_high_and_race_gender = discipline[discipline['61.3'] == 'Suspended'].groupby(['P
suspended_high_and_race_gender = (suspended_high_and_race_gender / suspended_high_and_race
print('Suspended in High School',suspended_high_and_race_gender)
```

```
Suspended in Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Female                          5.882353
                        Male                           29.411765
Latinx                  Female                          2.941176
                        Male                            5.882353
Multi-Race              Female                         14.705882
                        Male                            8.823529
Native American         Female                          2.941176
White                   Female                         11.764706
                        Male                           14.705882
                        Prefer to self-describe:        2.941176
dtype: float64
Suspended in Middle School Phase 2 Race             Phase 2 Gender
Black/African American  Female                          5.063291
                        Male                           29.113924
Latinx                  Female                          2.531646
                        Male                            6.329114
Multi-Race              Female                          8.860759
                        Male                           12.658228
Native American         Female                          2.531646
White                   Female                         16.455696
                        Male                           15.189873
                        Prefer to self-describe:        1.265823
dtype: float64
Suspended in High School Phase 2 Race            Phase 2 Gender
Black/African American  Female                         6.382979
                        Male                           27.659574
Latinx                  Female                          3.191489
                        Male                            4.255319
Multi-Race              Female                         12.765957
                        Male                            5.319149
Native American         Female                          2.127660
White                   Female                         26.595745
                        Male                           10.638298
                        Prefer to self-describe:        1.063830
dtype: float64
```

In [109…

```
suspended_elem_and_race_gender_count = discipline[discipline['61.1'] == 'Suspended'].group
suspended_middle_and_race_gender_count = discipline[discipline['61.2'] == 'Suspended'].gro
suspended_high_and_race_gender_count = discipline[discipline['61.3'] == 'Suspended'].group
print('Suspended in Elementary School',suspended_elem_and_race_gender_count)
print('Suspended in Middle School',suspended_middle_and_race_gender_count)
print('Suspended in High School',suspended_high_and_race_gender_count)
```

```
Suspended in Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Female                          2
                        Male                           10
Latinx                  Female                          1
```

```
                          Male                            2
Multi-Race                Female                          5
                          Male                            3
Native American           Female                          1
White                     Female                          4
                          Male                            5
                          Prefer to self-describe:        1
dtype: int64
Suspended in Middle School Phase 2 Race            Phase 2 Gender
Black/African American    Female                         4
                          Male                          23
Latinx                    Female                         2
                          Male                           5
Multi-Race                Female                         7
                          Male                          10
Native American           Female                         2
White                     Female                        13
                          Male                          12
                          Prefer to self-describe:       1
dtype: int64
Suspended in High School Phase 2 Race            Phase 2 Gender
Black/African American    Female                         6
                          Male                          26
Latinx                    Female                         3
                          Male                           4
Multi-Race                Female                        12
                          Male                           5
Native American           Female                         2
White                     Female                        25
                          Male                          10
                          Prefer to self-describe:       1
dtype: int64
```

In [110…

```
suspended_elem_and_race_gender2.to_frame()
suspended_elem_and_race_gender.to_frame()
suspended_elem = pd.concat([suspended_elem_and_race_gender2,suspended_elem_and_race_gender
suspended_elem.head()
```

Out[110…

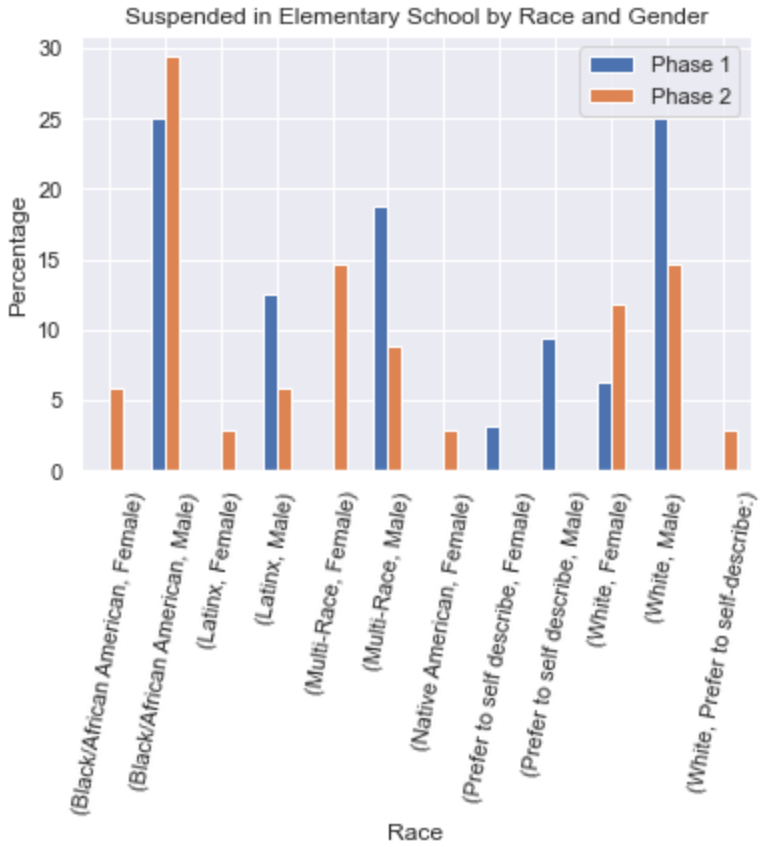
		0	1
Black/African American	**Female**	NaN	5.882353
	Male	25.0	29.411765
Latinx	**Female**	NaN	2.941176
	Male	12.5	5.882353
Multi-Race	**Female**	NaN	14.705882

In [111…

```
ax2 = suspended_elem.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in Elementary School by Race and Gender')
```

Out[111…

```
Text(0.5, 1.0, 'Suspended in Elementary School by Race and Gender')
```



In [112…

```
suspended_middle_and_race_gender2.to_frame()
suspended_middle_and_race_gender.to_frame()
suspended_middle = pd.concat([suspended_middle_and_race_gender2,suspended_middle_and_race_
suspended_middle.head()
```

Out[112…

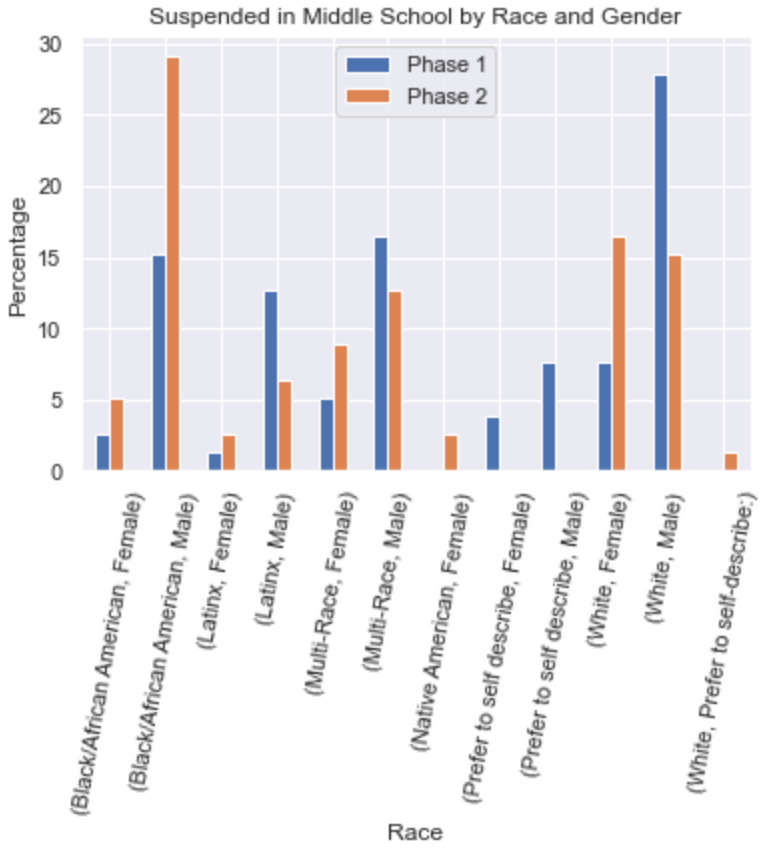
		0	1
Black/African American	**Female**	2.531646	5.063291
	Male	15.189873	29.113924
Latinx	**Female**	1.265823	2.531646
	Male	12.658228	6.329114
Multi-Race	**Female**	5.063291	8.860759

In [113…

```
ax2 = suspended_middle.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in Middle School by Race and Gender')
```

Out[113…

```
Text(0.5, 1.0, 'Suspended in Middle School by Race and Gender')
```



In [114…

```
suspended_high_and_race_gender2.to_frame()
suspended_high_and_race_gender.to_frame()
suspended_high = pd.concat([suspended_high_and_race_gender2,suspended_high_and_race_gender
suspended_high.head()
```

Out[114…

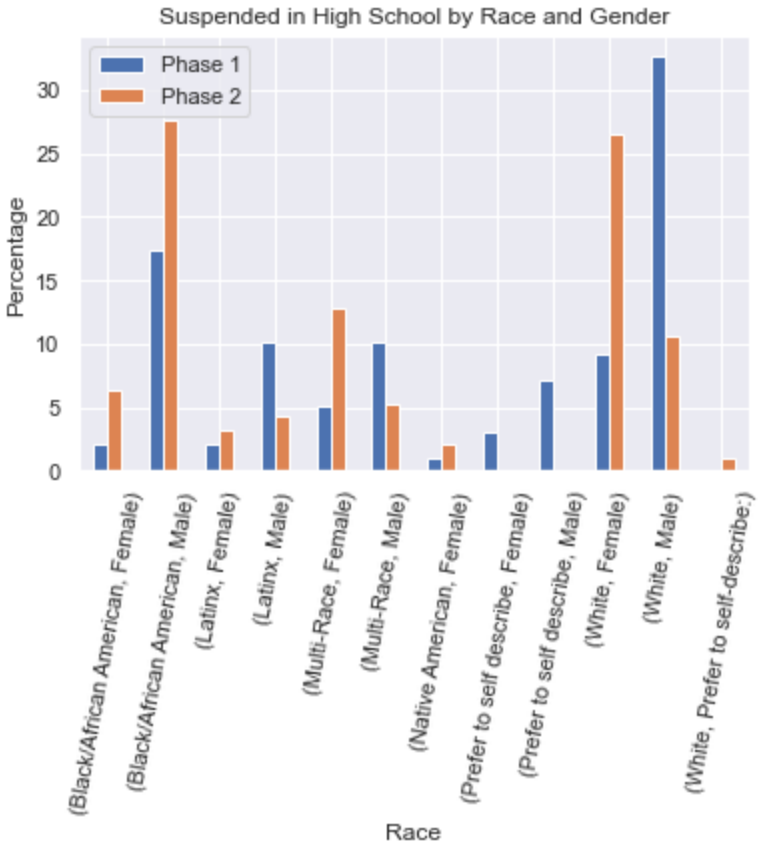
		0	1
Black/African American	**Female**	2.040816	6.382979
	Male	17.346939	27.659574
Latinx	**Female**	2.040816	3.191489
	Male	10.204082	4.255319
Multi-Race	**Female**	5.102041	12.765957

In [115…

```
ax2 = suspended_high.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in High School by Race and Gender')
```

Out[115…

```
Text(0.5, 1.0, 'Suspended in High School by Race and Gender')
```

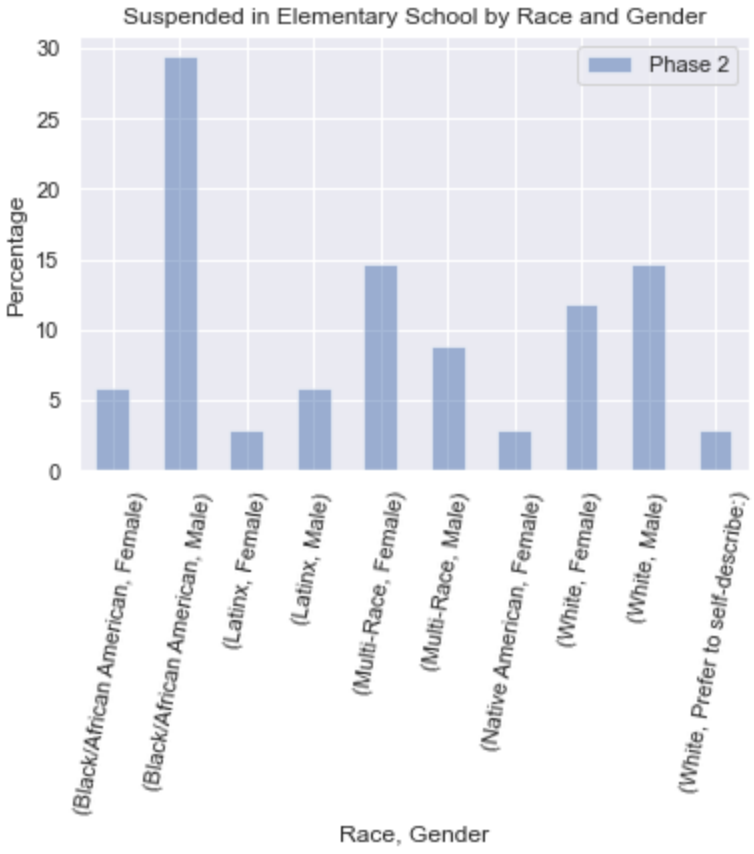


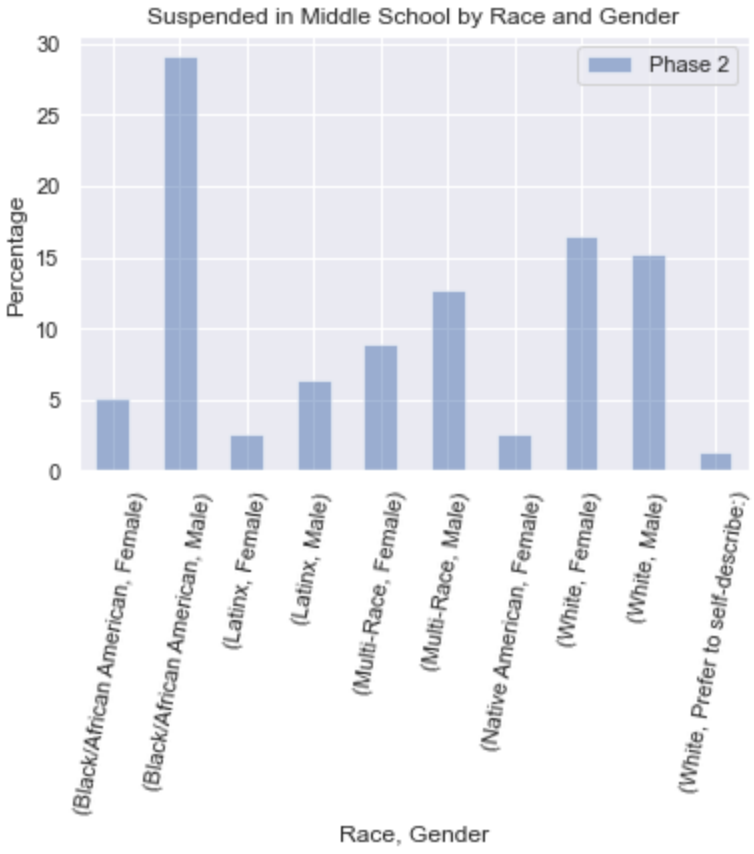
In [116…

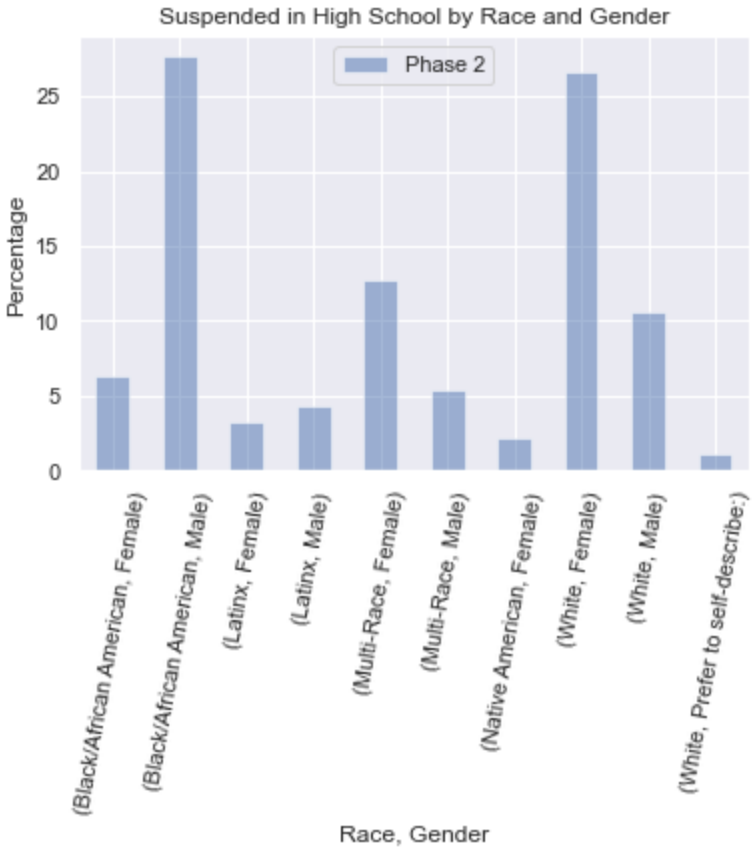
```
# suspended in elementary school by race and gender
plt.subplot(1, 1, 1)
suspended_elem_and_race_gender.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Suspended in Elementary School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# suspended in middle school by race and gender
plt.subplot(1,1,1)
suspended_middle_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Suspended in Middle School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# suspended in high school by race and gender
plt.subplot(1,1,1)
suspended_high_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Suspended in High School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Suspended in Elementary School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
(Black/African American, Female)
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
(White, Prefer to self-describe:)
Race, Gender


Suspended in Middle School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
(Black/African American, Female)
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
(White, Prefer to self-describe:)
Race, Gender



8. Expelled by Race and Gender

In [124…

```
# Phase 1
discipline2['62.1'] = discipline2['62.1'].replace(['Yes','yes'], 'Expelled')
# expelled and race gender combined values
expelled_elem_and_race_gender2 = discipline2[discipline2['62.1'] == 'Expelled'].groupby(['
expelled_elem_and_race_gender2 = (expelled_elem_and_race_gender2 / expelled_elem_and_race_
print('Expelled in Elementary School',expelled_elem_and_race_gender2)

discipline2['62.2'] = discipline2['62.2'].replace(['Yes','yes'], 'Expelled')
# expelled and race gender combined values
expelled_middle_and_race_gender2 = discipline2[discipline2['62.2'] == 'Expelled'].groupby
expelled_middle_and_race_gender2 = (expelled_middle_and_race_gender2 / expelled_middle_and
print('Expelled in Middle School',expelled_middle_and_race_gender2)

discipline2['62.3'] = discipline2['62.3'].replace(['Yes','yes'], 'Expelled')
# expelled and race gender combined values
expelled_high_and_race_gender2 = discipline2[discipline2['62.3'] == 'Expelled'].groupby(['
expelled_high_and_race_gender2 = (expelled_high_and_race_gender2 / expelled_high_and_race_
print('Expelled in High School',expelled_high_and_race_gender2)
```

```
Expelled in Elementary School Phase 1 Race             Phase 1 Gender
Black/African American   Male                        21.052632
Latinx                   Male                        10.526316
Multi-Race               Male                        26.315789
Prefer to self describe  Male                        15.789474
White                    Female                       5.263158
                         Male                        15.789474
                         Prefer to self-describe:     5.263158
dtype: float64
Expelled in Middle School Phase 1 Race             Phase 1 Gender
Black/African American   Female                       5.555556
                         Male                        25.000000
Latinx                   Male                        11.111111
Multi-Race               Female                       8.333333
                         Male                        13.888889
```

```
Prefer to self describe  Male                          8.333333
White                    Female                       11.111111
                         Male                         13.888889
                         Prefer to self-describe:      2.777778
dtype: float64
Expelled in High School Phase 1 Race             Phase 1 Gender
Black/African American   Female                       1.428571
                         Male                        21.428571
Latinx                   Female                       1.428571
                         Male                        12.857143
Multi-Race               Female                       2.857143
                         Male                         8.571429
Native American          Female                       1.428571
Prefer to self describe  Female                       1.428571
                         Male                         4.285714
White                    Female                      15.714286
                         Male                        27.142857
                         Prefer to self-describe:     1.428571
dtype: float64
```

In [118…

```
expelled_elem_and_race_gender2_count = discipline2[discipline2['62.1'] == 'Expelled'].grou
expelled_middle_and_race_gender2_count = discipline2[discipline2['62.2'] == 'Expelled'].gr
expelled_high_and_race_gender2_count = discipline2[discipline2['62.3'] == 'Expelled'].grou
print('Expelled in Elementary School',expelled_elem_and_race_gender2_count)
print('Expelled in Middle School',expelled_middle_and_race_gender2_count)
print('Expelled in High School',expelled_high_and_race_gender2_count)
```

```
Expelled in Elementary School Phase 1 Race             Phase 1 Gender
Black/African American   Male                          4
Latinx                   Male                          2
Multi-Race               Male                          5
Prefer to self describe  Male                          3
White                    Female                        1
                         Male                          3
                         Prefer to self-describe:      1
dtype: int64
Expelled in Middle School Phase 1 Race             Phase 1 Gender
Black/African American   Female                        2
                         Male                          9
Latinx                   Male                          4
Multi-Race               Female                        3
                         Male                          5
Prefer to self describe  Male                          3
White                    Female                        4
                         Male                          5
                         Prefer to self-describe:      1
dtype: int64
Expelled in High School Phase 1 Race             Phase 1 Gender
Black/African American   Female                        1
                         Male                         15
Latinx                   Female                        1
                         Male                          9
Multi-Race               Female                        2
                         Male                          6
Native American          Female                        1
Prefer to self describe  Female                        1
                         Male                          3
White                    Female                       11
                         Male                         19
                         Prefer to self-describe:      1
dtype: int64
```

In [119…

```
# Phase 2
discipline['62.1'] = discipline['62.1'].replace(['Yes','yes'], 'Expelled')
```

```
# expelled and race gender combined values
expelled_elem_and_race_gender = discipline[discipline['62.1'] == 'Expelled'].groupby(['Pha
expelled_elem_and_race_gender = (expelled_elem_and_race_gender / expelled_elem_and_race_ge
print('Expelled in Elementary School',expelled_elem_and_race_gender)

discipline['62.2'] = discipline['62.2'].replace(['Yes','yes'], 'Expelled')
# expelled and race gender combined values
expelled_middle_and_race_gender = discipline[discipline['62.2'] == 'Expelled'].groupby(['F
expelled_middle_and_race_gender = (expelled_middle_and_race_gender / expelled_middle_and_r
print('Expelled in Middle School',expelled_middle_and_race_gender)

discipline['62.3'] = discipline['62.3'].replace(['Yes','yes'], 'Expelled')
# expelled and race gender combined values
expelled_high_and_race_gender = discipline[discipline['62.3'] == 'Expelled'].groupby(['Pha
expelled_high_and_race_gender = (expelled_high_and_race_gender / expelled_high_and_race_ge
print('Expelled in High School',expelled_high_and_race_gender)
```

```
Expelled in Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Male              41.666667
Latinx                  Female             8.333333
                        Male               8.333333
Multi-Race              Female             8.333333
                        Male               8.333333
Native American         Female             8.333333
White                   Male              16.666667
dtype: float64
Expelled in Middle School Phase 2 Race            Phase 2 Gender
Black/African American  Male              13.333333
Latinx                  Female             6.666667
                        Male              33.333333
Multi-Race              Female             6.666667
                        Male               6.666667
Native American         Female             6.666667
White                   Female            13.333333
                        Male              13.333333
dtype: float64
Expelled in High School Phase 2 Race            Phase 2 Gender
Black/African American  Female                   2.857143
                        Male                    28.571429
Latinx                  Female                   2.857143
                        Male                     8.571429
Multi-Race              Female                  11.428571
                        Male                     8.571429
Native American         Female                   2.857143
White                   Female                  17.142857
                        Male                    14.285714
                        Prefer to self-describe:     2.857143
dtype: float64
```

In [122…

```
expelled_elem_and_race_gender_count = discipline[discipline['62.1'] == 'Expelled'].groupby
expelled_middle_and_race_gender_count = discipline[discipline['62.2'] == 'Expelled'].group
expelled_high_and_race_gender_count = discipline[discipline['62.3'] == 'Expelled'].groupby
print('Expelled in Elementary School',expelled_elem_and_race_gender_count)
print('Expelled in Middle School',expelled_middle_and_race_gender_count)
print('Expelled in High School',expelled_high_and_race_gender_count)
```

```
Expelled in Elementary School Phase 2 Race            Phase 2 Gender
Black/African American  Male              5
Latinx                  Female            1
                        Male              1
Multi-Race              Female            1
                        Male              1
Native American         Female            1
White                   Male              2
dtype: int64
```

```
Expelled in Middle School Phase 2 Race            Phase 2 Gender
Black/African American  Male                2
Latinx                  Female              1
                        Male                5
Multi-Race              Female              1
                        Male                1
Native American         Female              1
White                   Female              2
                        Male                2
dtype: int64
Expelled in High School Phase 2 Race            Phase 2 Gender
Black/African American  Female                       1
                        Male                        10
Latinx                  Female                       1
                        Male                         3
Multi-Race              Female                       4
                        Male                         3
Native American         Female                       1
White                   Female                       6
                        Male                         5
                        Prefer to self-describe:     1
dtype: int64
```

In [125…

```
expelled_elem_and_race_gender2.to_frame()
expelled_elem_and_race_gender.to_frame()
expelled_elem = pd.concat([expelled_elem_and_race_gender2,expelled_elem_and_race_gender],a
expelled_elem.head()
```

Out[125…

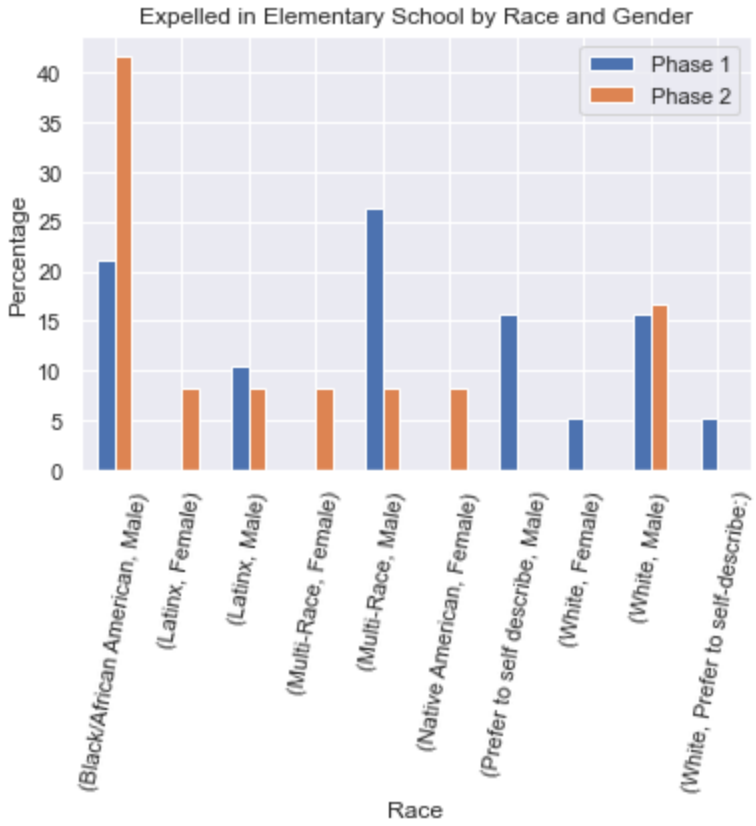
		0	1
Black/African American	**Male**	21.052632	41.666667
Latinx	**Female**	NaN	8.333333
	Male	10.526316	8.333333
Multi-Race	**Female**	NaN	8.333333
	Male	26.315789	8.333333

In [126…

```
ax2 = expelled_elem.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in Elementary School by Race and Gender')
```

Out[126…

```
Text(0.5, 1.0, 'Expelled in Elementary School by Race and Gender')
```



In [127…

```
expelled_middle_and_race_gender2.to_frame()
expelled_middle_and_race_gender.to_frame()
expelled_middle = pd.concat([expelled_middle_and_race_gender2,expelled_middle_and_race_ger
expelled_middle.head()
```

Out[127…

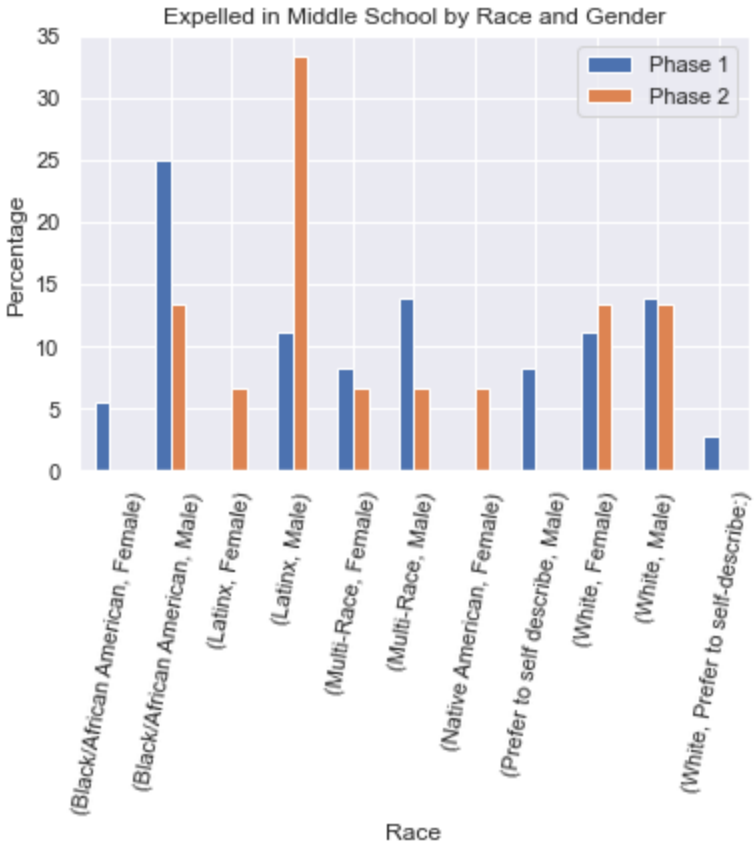
		0	1
Black/African American	**Female**	5.555556	NaN
	Male	25.000000	13.333333
Latinx	**Female**	NaN	6.666667
	Male	11.111111	33.333333
Multi-Race	**Female**	8.333333	6.666667

In [128…

```
ax2 = expelled_middle.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in Middle School by Race and Gender')
```

Out[128…

```
Text(0.5, 1.0, 'Expelled in Middle School by Race and Gender')
```



In [129…

```
expelled_high_and_race_gender2.to_frame()
expelled_high_and_race_gender.to_frame()
expelled_high = pd.concat([expelled_high_and_race_gender2,expelled_high_and_race_gender],a
expelled_high.head()
```

Out[129…

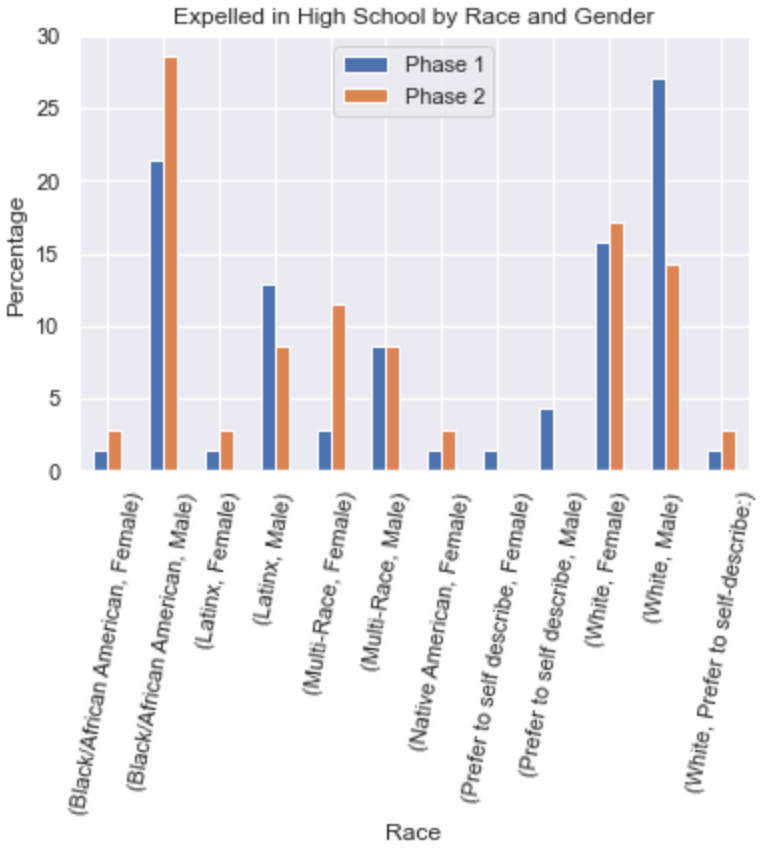
		0	1
Black/African American	**Female**	1.428571	2.857143
	Male	21.428571	28.571429
Latinx	**Female**	1.428571	2.857143
	Male	12.857143	8.571429
Multi-Race	**Female**	2.857143	11.428571

In [130…

```
ax2 = expelled_high.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in High School by Race and Gender')
```

Out[130…

```
Text(0.5, 1.0, 'Expelled in High School by Race and Gender')
```

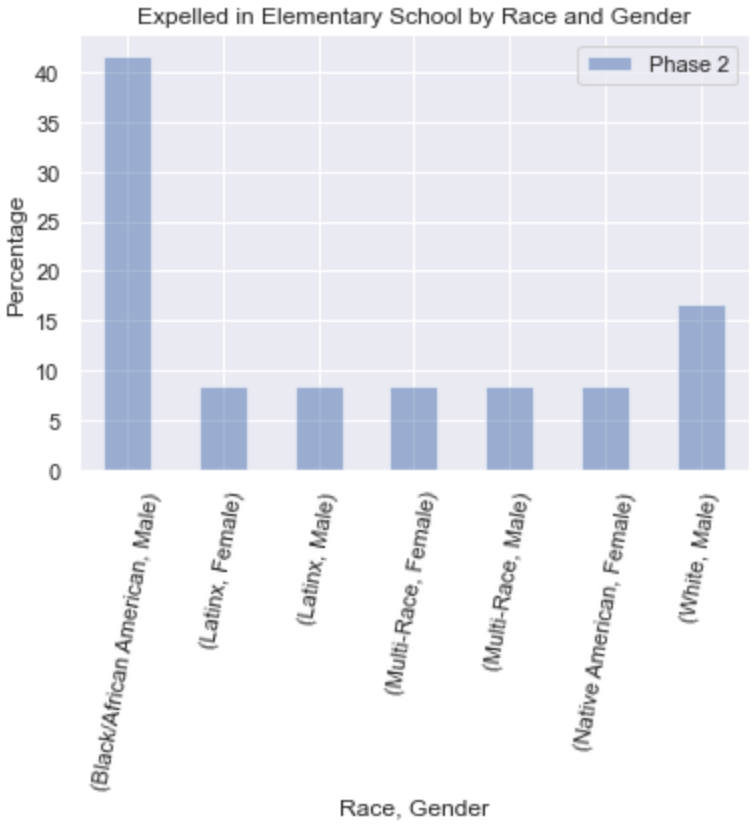


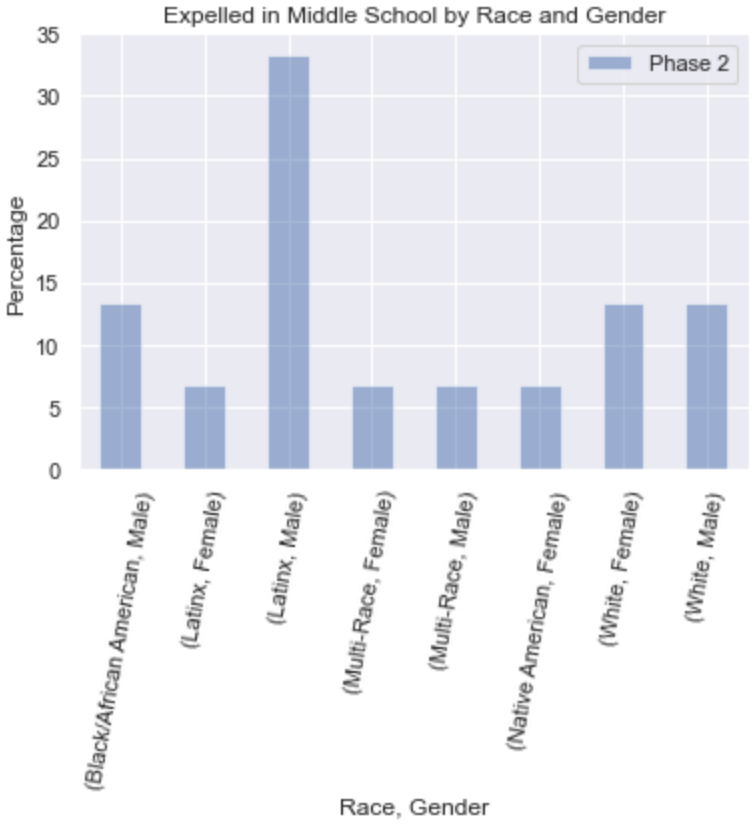
In [131…

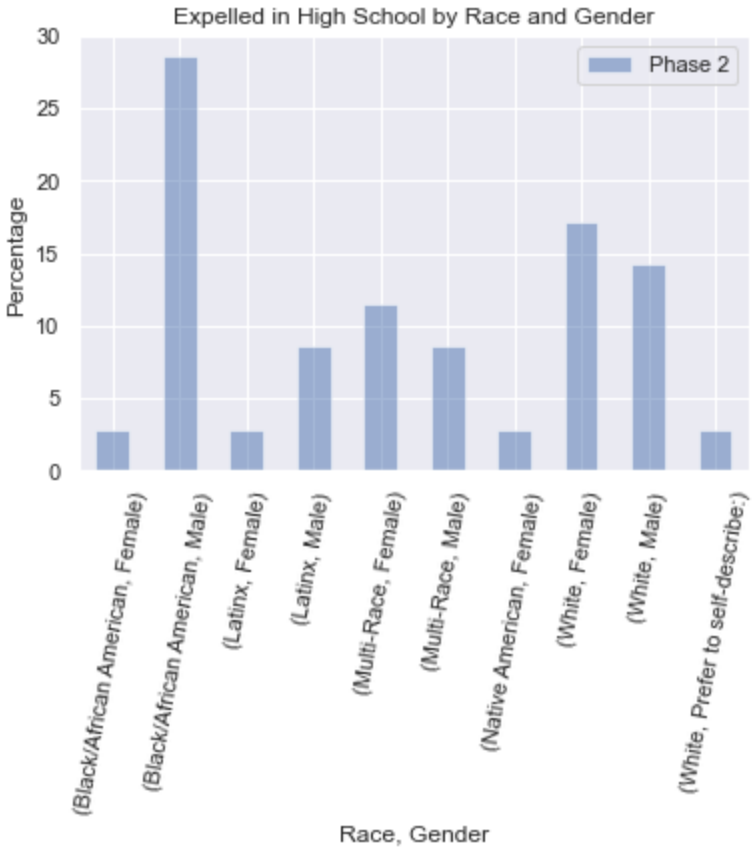
```
# expelled in elementary school by race and gender
plt.subplot(1, 1, 1)
expelled_elem_and_race_gender.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Expelled in Elementary School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# expelled in middle school by race and gender
plt.subplot(1,1,1)
expelled_middle_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Expelled in Middle School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# expelled in high school by race and gender
plt.subplot(1,1,1)
expelled_high_and_race_gender.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race, Gender')
plt.ylabel('Percentage')
plt.title('Expelled in High School by Race and Gender')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Expelled in Elementary School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Male)
Race, Gender


Expelled in Middle School by Race and Gender
Phase 2
Percentage
0
5
10
15
20
25
30
35
(Black/African American, Male)
(Latinx, Female)
(Latinx, Male)
(Multi-Race, Female)
(Multi-Race, Male)
(Native American, Female)
(White, Female)
(White, Male)
Race, Gender



9. People on an IEP, Kicked Out of Class by Race

In [136…

```
# Phase 1
discipline2['59.1'] = discipline2['59.1'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race/iep combined values
kicked_out_elem_and_race_iep2 = discipline2.loc[(discipline2['59.1']=='Kicked Out') & (dis
kicked_out_elem_and_race_iep2 = (kicked_out_elem_and_race_iep2 / kicked_out_elem_and_race_
print('Kicked Out/IEP Elementary School',kicked_out_elem_and_race_iep2)

discipline2['59.2'] = discipline2['59.2'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race/iep combined values
kicked_out_middle_and_race_iep2 = discipline2.loc[(discipline2['59.2']=='Kicked Out') & (d
kicked_out_middle_and_race_iep2 = (kicked_out_middle_and_race_iep2 / kicked_out_middle_and
print('Kicked Out/IEP Middle School',kicked_out_middle_and_race_iep2)

discipline2['59.3'] = discipline2['59.3'].replace(['Often','A few times','Once','A few tir
# kicked out of class and race/iep combined values
kicked_out_high_and_race_iep2 = discipline2.loc[(discipline2['59.3']=='Kicked Out') & (dis
kicked_out_high_and_race_iep2 = (kicked_out_high_and_race_iep2 / kicked_out_high_and_race_
print('Kicked Out/IEP High School',kicked_out_high_and_race_iep2)
```

```
Kicked Out/IEP Elementary School Phase 1 Race
Black/African American     16.129032
Latinx                      9.677419
Multi-Race                 29.032258
Prefer to self describe     6.451613
White                      38.709677
dtype: float64
Kicked Out/IEP Middle School Phase 1 Race
Black/African American      9.756098
Latinx                     12.195122
Multi-Race                 29.268293
Prefer to self describe     7.317073
White                      41.463415
dtype: float64
Kicked Out/IEP High School Phase 1 Race
```

```
Black/African American     15.0
Latinx                     10.0
Multi-Race                 27.5
Prefer to self describe     5.0
White                      42.5
dtype: float64
```

In [137…

```
kicked_out_elem_and_race_iep2_count = discipline2.loc[(discipline2['59.1']=='Kicked Out')
kicked_out_middle_and_race_iep2_count = discipline2.loc[(discipline2['59.2']=='Kicked Out'
kicked_out_high_and_race_iep2_count = discipline2.loc[(discipline2['59.3']=='Kicked Out')
print('Kicked Out/IEP Elementary School',kicked_out_elem_and_race_iep2_count)
print('Kicked Out/IEP Middle School',kicked_out_middle_and_race_iep2_count)
print('Kicked Out/IEP High School',kicked_out_high_and_race_iep2_count)
```

```
Kicked Out/IEP Elementary School Phase 1 Race
Black/African American      5
Latinx                      3
Multi-Race                  9
Prefer to self describe     2
White                      12
dtype: int64
Kicked Out/IEP Middle School Phase 1 Race
Black/African American      4
Latinx                      5
Multi-Race                 12
Prefer to self describe     3
White                      17
dtype: int64
Kicked Out/IEP High School Phase 1 Race
Black/African American      6
Latinx                      4
Multi-Race                 11
Prefer to self describe     2
White                      17
dtype: int64
```

In [138…

```
# Phase 2
discipline['59.1'] = discipline['59.1'].replace(['Often','A few times','Once','A few times
# kicked out of class and race/iep combined values
kicked_out_elem_and_race_iep = discipline.loc[(discipline['59.1']=='Kicked Out') & (discip
kicked_out_elem_and_race_iep = (kicked_out_elem_and_race_iep / kicked_out_elem_and_race_ie
print('Kicked Out/IEP Elementary School',kicked_out_elem_and_race_iep)

discipline['59.2'] = discipline['59.2'].replace(['Often','A few times','Once','A few times
# kicked out of class and race/iep combined values
kicked_out_middle_and_race_iep = discipline.loc[(discipline['59.2']=='Kicked Out') & (disc
kicked_out_middle_and_race_iep = (kicked_out_middle_and_race_iep / kicked_out_middle_and_r
print('Kicked Out/IEP Middle School',kicked_out_middle_and_race_iep)

discipline['59.3'] = discipline['59.3'].replace(['Often','A few times','Once','A few times
# kicked out of class and race/iep combined values
kicked_out_high_and_race_iep = discipline.loc[(discipline['59.3']=='Kicked Out') & (discip
kicked_out_high_and_race_iep = (kicked_out_high_and_race_iep / kicked_out_high_and_race_ie
print('Kicked Out/IEP High School',kicked_out_high_and_race_iep)
```

```
Kicked Out/IEP Elementary School Phase 2 Race
Black/African American    21.428571
Latinx                     7.142857
Multi-Race                28.571429
White                     42.857143
dtype: float64
Kicked Out/IEP Middle School Phase 2 Race
Black/African American    25.000000
Latinx                     4.166667
```

```
Multi-Race                 29.166667
Native American             4.166667
White                      37.500000
dtype: float64
Kicked Out/IEP High School Phase 2 Race
Black/African American     20.833333
Latinx                      4.166667
Multi-Race                 25.000000
Native American             4.166667
White                      45.833333
dtype: float64
```

In [139…

```
kicked_out_elem_and_race_iep_count = discipline.loc[(discipline['59.1']=='Kicked Out') &
kicked_out_middle_and_race_iep_count = discipline.loc[(discipline['59.2']=='Kicked Out') &
kicked_out_high_and_race_iep_count = discipline.loc[(discipline['59.3']=='Kicked Out') &
print('Kicked Out/IEP Elementary School',kicked_out_elem_and_race_iep_count)
print('Kicked Out/IEP Middle School',kicked_out_middle_and_race_iep_count)
print('Kicked Out/IEP High School',kicked_out_high_and_race_iep_count)
```

```
Kicked Out/IEP Elementary School Phase 2 Race
Black/African American    3
Latinx                    1
Multi-Race                4
White                     6
dtype: int64
Kicked Out/IEP Middle School Phase 2 Race
Black/African American    6
Latinx                    1
Multi-Race                7
Native American           1
White                     9
dtype: int64
Kicked Out/IEP High School Phase 2 Race
Black/African American     5
Latinx                     1
Multi-Race                 6
Native American            1
White                     11
dtype: int64
```

In [140…

```
kicked_out_elem_and_race_iep2.to_frame()
kicked_out_elem_and_race_iep.to_frame()
kicked_out_elem_iep = pd.concat([kicked_out_elem_and_race_iep2,kicked_out_elem_and_race_ie
kicked_out_elem_iep.head()
```

Out[140…

	0	1
Black/African American	16.129032	21.428571
Latinx	9.677419	7.142857
Multi-Race	29.032258	28.571429
Prefer to self describe	6.451613	NaN
White	38.709677	42.857143

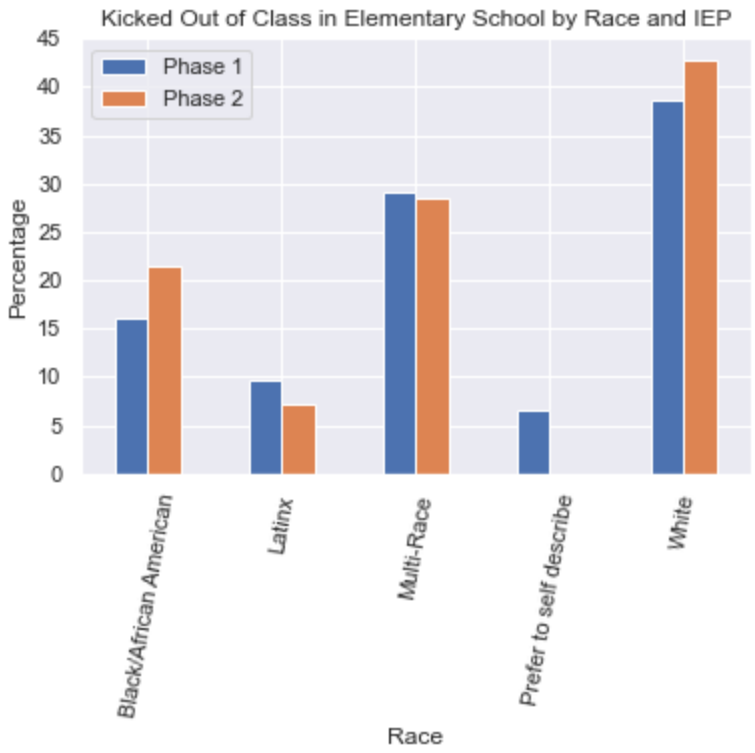
In [141…

```
ax2 = kicked_out_elem_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
```

```
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked Out of Class in Elementary School by Race and IEP')
```

Out[141…

```
Text(0.5, 1.0, 'Kicked Out of Class in Elementary School by Race and IEP')
```



In [142…

```
kicked_out_middle_and_race_iep2.to_frame()
kicked_out_middle_and_race_iep.to_frame()
kicked_out_middle_iep = pd.concat([kicked_out_middle_and_race_iep2,kicked_out_middle_and_r
kicked_out_middle_iep.head()
```

Out[142…

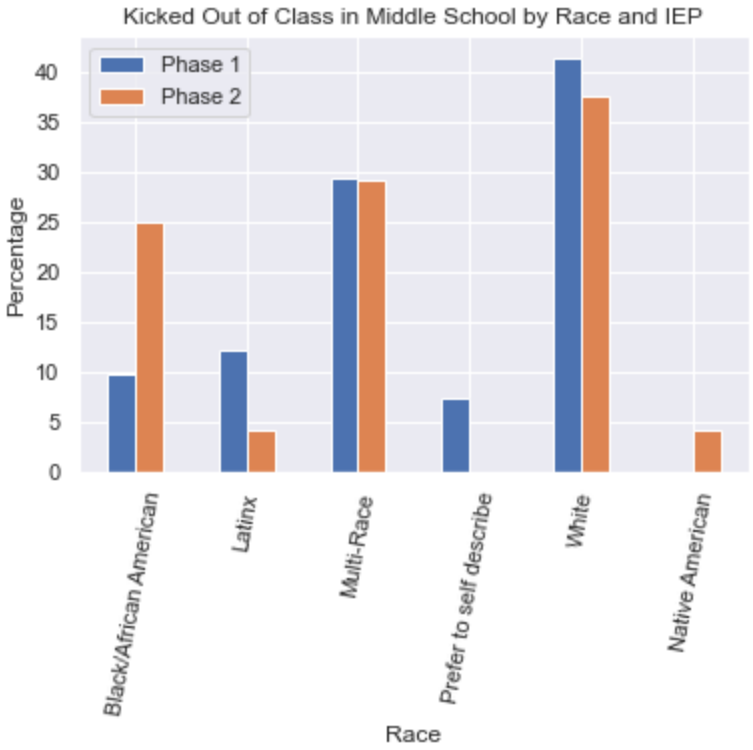
	0	1
Black/African American	9.756098	25.000000
Latinx	12.195122	4.166667
Multi-Race	29.268293	29.166667
Prefer to self describe	7.317073	NaN
White	41.463415	37.500000

In [143…

```
ax2 = kicked_out_middle_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked Out of Class in Middle School by Race and IEP')
```

Out[143…

```
Text(0.5, 1.0, 'Kicked Out of Class in Middle School by Race and IEP')
```



In [144…

```
kicked_out_high_and_race_iep2.to_frame()
kicked_out_high_and_race_iep.to_frame()
kicked_out_high_iep = pd.concat([kicked_out_high_and_race_iep2,kicked_out_high_and_race_ie
kicked_out_high_iep.head()
```

Out[144…

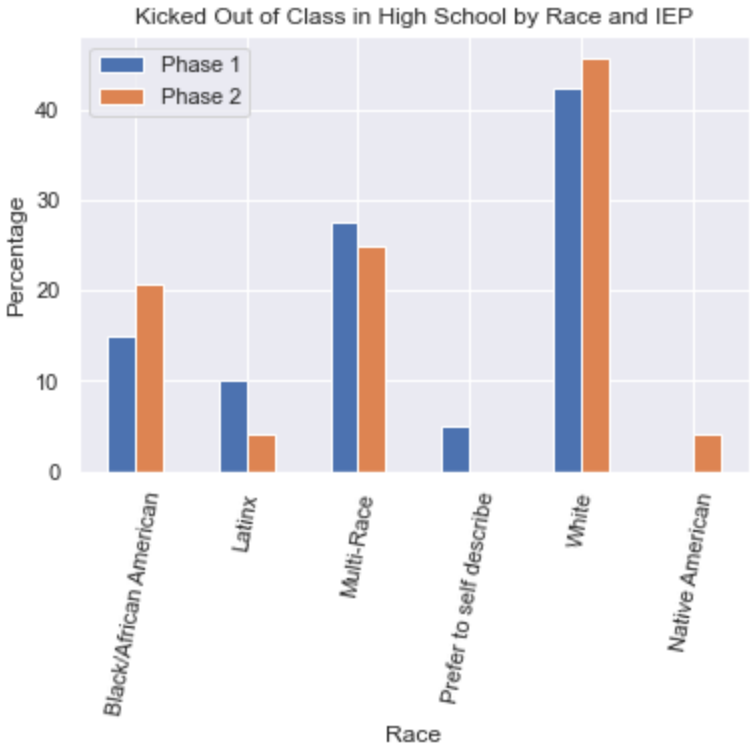
	0	1
Black/African American	15.0	20.833333
Latinx	10.0	4.166667
Multi-Race	27.5	25.000000
Prefer to self describe	5.0	NaN
White	42.5	45.833333

In [145…

```
ax2 = kicked_out_high_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Kicked Out of Class in High School by Race and IEP')
```

Out[145…

```
Text(0.5, 1.0, 'Kicked Out of Class in High School by Race and IEP')
```

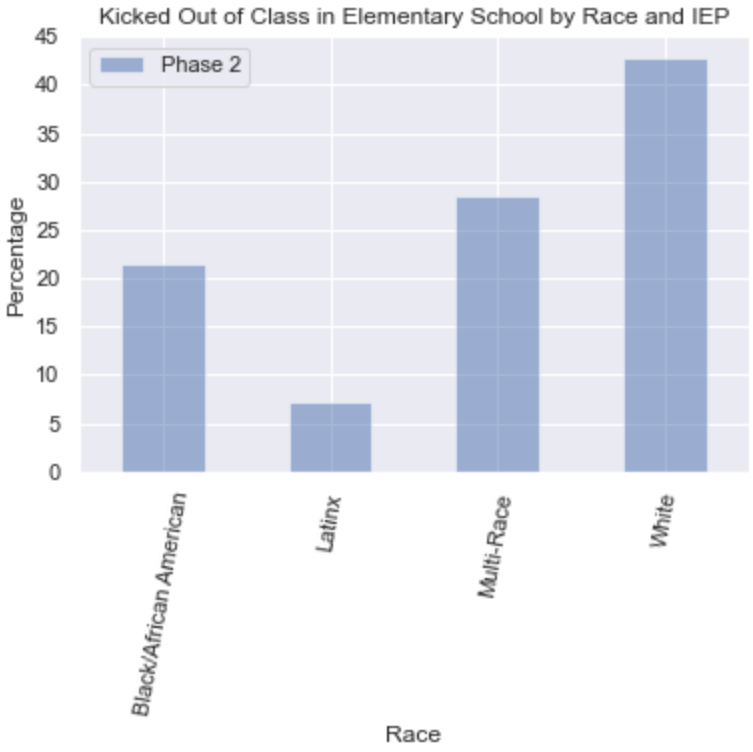


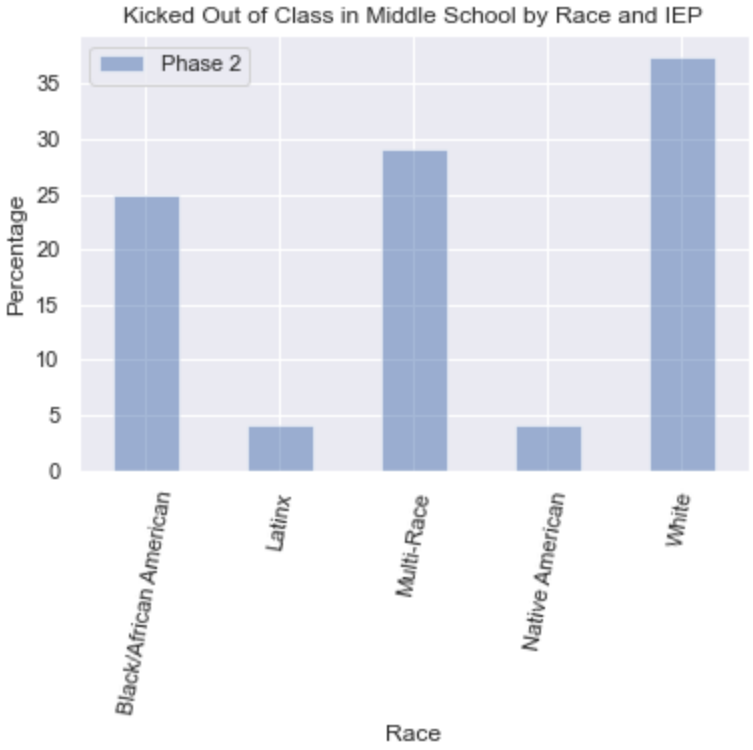
In [146…

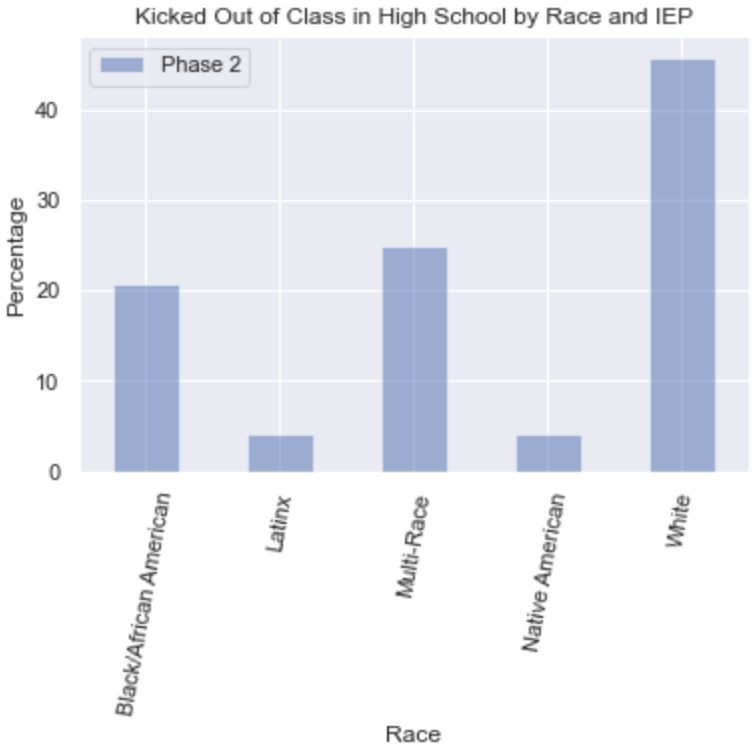
```
# kicked out of class in elementary school by race and iep
plt.subplot(1, 1, 1)
kicked_out_elem_and_race_iep.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in Elementary School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# kicked out of class in middle school by race and iep
plt.subplot(1,1,1)
kicked_out_middle_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in Middle School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# kicked out of class in high school by race and iep
plt.subplot(1,1,1)
kicked_out_high_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Kicked Out of Class in High School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Kicked Out of Class in Elementary School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
45
Black/African American
Latinx
Multi-Race
White
Race


Kicked Out of Class in Middle School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Native American
White
Race



10. People on an IEP, Sent Home by Race

In [147…

```
# Phase 1
discipline2['60.1'] = discipline2['60.1'].replace(['Often','A few times','Once','A few tir
# sent home and race/iep combined values
sent_home_elem_and_race_iep2 = discipline2.loc[(discipline2['60.1']=='Sent Home') & (disci
sent_home_elem_and_race_iep2 = (sent_home_elem_and_race_iep2 / sent_home_elem_and_race_iep
print('Sent Home/IEP Elementary School',sent_home_elem_and_race_iep2)

discipline2['60.2'] = discipline2['60.2'].replace(['Often','A few times','Once','A few tir
# sent home and race/iep combined values
sent_home_middle_and_race_iep2 = discipline2.loc[(discipline2['60.2']=='Sent Home') & (dis
sent_home_middle_and_race_iep2 = (sent_home_middle_and_race_iep2 / sent_home_middle_and_ra
print('Sent Home/IEP Middle School',sent_home_middle_and_race_iep2)

discipline2['60.3'] = discipline2['60.3'].replace(['Often','A few times','Once','A few tir
# sent home and race/iep combined values
sent_home_high_and_race_iep2 = discipline2.loc[(discipline2['60.3']=='Sent Home') & (disci
sent_home_high_and_race_iep2 = (sent_home_high_and_race_iep2 / sent_home_high_and_race_iep
print('Sent Home/IEP High School',sent_home_high_and_race_iep2)
```

```
Sent Home/IEP Elementary School Phase 1 Race
Black/African American     17.241379
Latinx                     10.344828
Multi-Race                 31.034483
Prefer to self describe     6.896552
White                      34.482759
dtype: float64
Sent Home/IEP Middle School Phase 1 Race
Black/African American     10.256410
Latinx                     10.256410
Multi-Race                 25.641026
Prefer to self describe     7.692308
White                      46.153846
dtype: float64
Sent Home/IEP High School Phase 1 Race
Black/African American     12.5
Latinx                     10.0
Multi-Race                 25.0
```

```
Prefer to self describe     7.5
White                       45.0
dtype: float64
```

In [148…

```
sent_home_elem_and_race_iep2_count = discipline2.loc[(discipline2['60.1']=='Sent Home') &
sent_home_middle_and_race_iep2_count = discipline2.loc[(discipline2['60.2']=='Sent Home')
sent_home_high_and_race_iep2_count = discipline2.loc[(discipline2['60.3']=='Sent Home') &
print('Sent Home/IEP Elementary School',sent_home_elem_and_race_iep2_count)
print('Sent Home/IEP Middle School',sent_home_middle_and_race_iep2_count)
print('Sent Home/IEP High School',sent_home_high_and_race_iep2_count)
```

```
Sent Home/IEP Elementary School Phase 1 Race
Black/African American      5
Latinx                      3
Multi-Race                  9
Prefer to self describe     2
White                      10
dtype: int64
Sent Home/IEP Middle School Phase 1 Race
Black/African American      4
Latinx                      4
Multi-Race                 10
Prefer to self describe     3
White                      18
dtype: int64
Sent Home/IEP High School Phase 1 Race
Black/African American      5
Latinx                      4
Multi-Race                 10
Prefer to self describe     3
White                      18
dtype: int64
```

In [149…

```
# Phase 2
discipline['60.1'] = discipline['60.1'].replace(['Often','A few times','Once','A few times
# sent home and race/iep combined values
sent_home_elem_and_race_iep = discipline.loc[(discipline['60.1']=='Sent Home') & (discipli
sent_home_elem_and_race_iep = (sent_home_elem_and_race_iep / sent_home_elem_and_race_iep.s
print('Sent Home/IEP Elementary School',sent_home_elem_and_race_iep)

discipline['60.2'] = discipline['60.2'].replace(['Often','A few times','Once','A few times
# sent home and race/iep combined values
sent_home_middle_and_race_iep = discipline.loc[(discipline['60.2']=='Sent Home') & (discip
sent_home_middle_and_race_iep = (sent_home_middle_and_race_iep / sent_home_middle_and_race
print('Sent Home/IEP Middle School',sent_home_middle_and_race_iep)

discipline['60.3'] = discipline['60.3'].replace(['Often','A few times','Once','A few times
# sent home and race/iep combined values
sent_home_high_and_race_iep = discipline.loc[(discipline['60.3']=='Sent Home') & (discipli
sent_home_high_and_race_iep = (sent_home_high_and_race_iep / sent_home_high_and_race_iep.s
print('Sent Home/IEP High School',sent_home_high_and_race_iep)
```

```
Sent Home/IEP Elementary School Phase 2 Race
Black/African American    13.333333
Latinx                     6.666667
Multi-Race                33.333333
White                     46.666667
dtype: float64
Sent Home/IEP Middle School Phase 2 Race
Black/African American    20.833333
Latinx                     4.166667
Multi-Race                29.166667
Native American            4.166667
White                     41.666667
```

```
dtype: float64
Sent Home/IEP High School Phase 2 Race
Black/African American    17.391304
Latinx                     4.347826
Multi-Race                26.086957
Native American            4.347826
White                     47.826087
dtype: float64
```

In [150…

```
sent_home_elem_and_race_iep_count = discipline.loc[(discipline['60.1']=='Sent Home') & (di
sent_home_middle_and_race_iep_count = discipline.loc[(discipline['60.2']=='Sent Home') &
sent_home_high_and_race_iep_count = discipline.loc[(discipline['60.3']=='Sent Home') & (di
print('Sent Home/IEP Elementary School',sent_home_elem_and_race_iep_count)
print('Sent Home/IEP Middle School',sent_home_middle_and_race_iep_count)
print('Sent Home/IEP High School',sent_home_high_and_race_iep_count)
```

```
Sent Home/IEP Elementary School Phase 2 Race
Black/African American    2
Latinx                    1
Multi-Race                5
White                     7
dtype: int64
Sent Home/IEP Middle School Phase 2 Race
Black/African American     5
Latinx                     1
Multi-Race                 7
Native American            1
White                     10
dtype: int64
Sent Home/IEP High School Phase 2 Race
Black/African American     4
Latinx                     1
Multi-Race                 6
Native American            1
White                     11
dtype: int64
```

In [151…

```
sent_home_elem_and_race_iep2.to_frame()
sent_home_elem_and_race_iep.to_frame()
sent_home_elem_iep = pd.concat([sent_home_elem_and_race_iep2,sent_home_elem_and_race_iep],
sent_home_elem_iep.head()
```

Out[151…

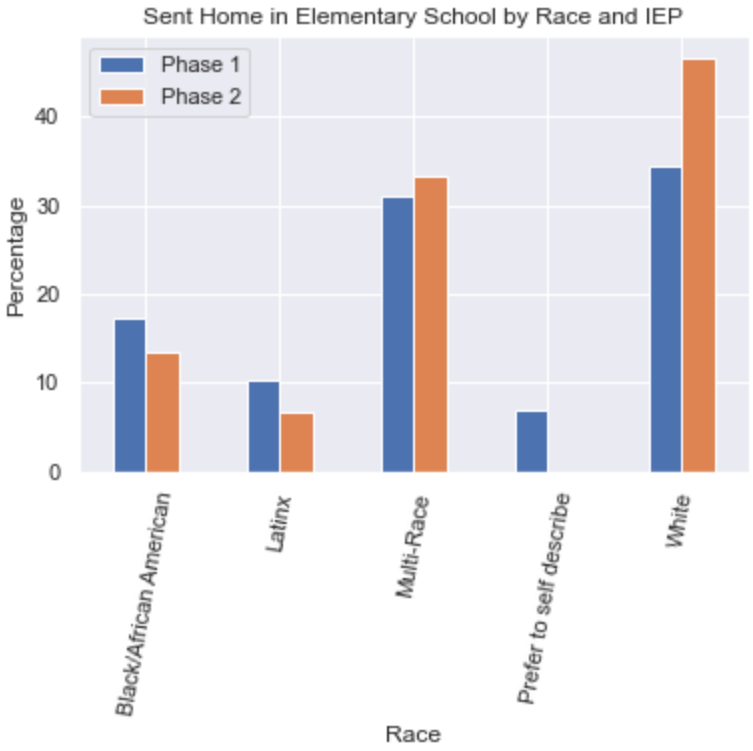
	0	1
Black/African American	17.241379	13.333333
Latinx	10.344828	6.666667
Multi-Race	31.034483	33.333333
Prefer to self describe	6.896552	NaN
White	34.482759	46.666667

In [152…

```
ax2 = sent_home_elem_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in Elementary School by Race and IEP')
```

```
Text(0.5, 1.0, 'Sent Home in Elementary School by Race and IEP')
```

Out[152…



In [153…

```
sent_home_middle_and_race_iep2.to_frame()
sent_home_middle_and_race_iep.to_frame()
sent_home_middle_iep = pd.concat([sent_home_middle_and_race_iep2,sent_home_middle_and_race
sent_home_middle_iep.head()
```

Out[153…

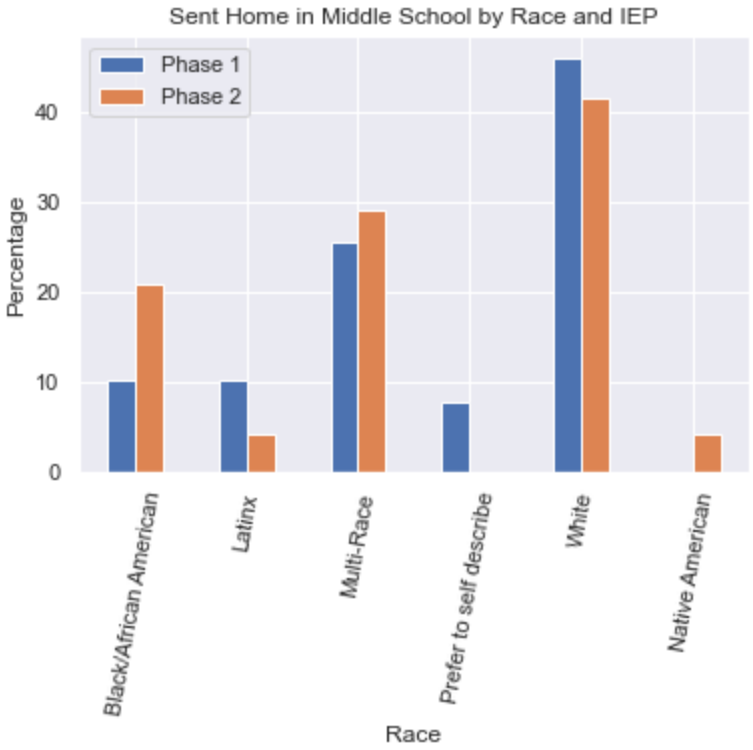
	0	1
Black/African American	10.256410	20.833333
Latinx	10.256410	4.166667
Multi-Race	25.641026	29.166667
Prefer to self describe	7.692308	NaN
White	46.153846	41.666667

In [154…

```
ax2 = sent_home_middle_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in Middle School by Race and IEP')
```

Out[154…

```
Text(0.5, 1.0, 'Sent Home in Middle School by Race and IEP')
```



In [155…

```
sent_home_high_and_race_iep2.to_frame()
sent_home_high_and_race_iep.to_frame()
sent_home_high_iep = pd.concat([sent_home_high_and_race_iep2,sent_home_high_and_race_iep],
sent_home_high_iep.head()
```

Out[155…

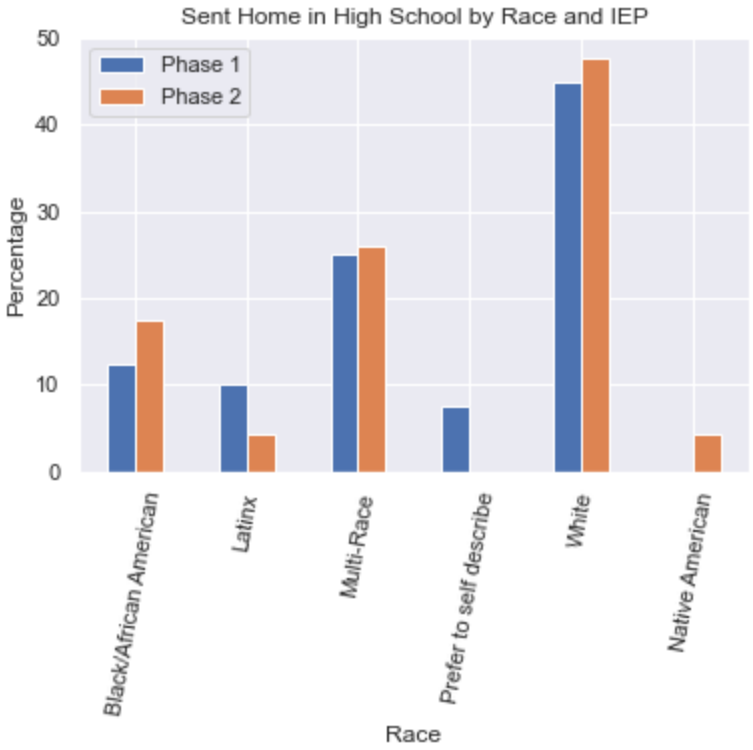
	0	1
Black/African American	12.5	17.391304
Latinx	10.0	4.347826
Multi-Race	25.0	26.086957
Prefer to self describe	7.5	NaN
White	45.0	47.826087

In [156…

```
ax2 = sent_home_high_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Sent Home in High School by Race and IEP')
```

Out[156…

```
Text(0.5, 1.0, 'Sent Home in High School by Race and IEP')
```

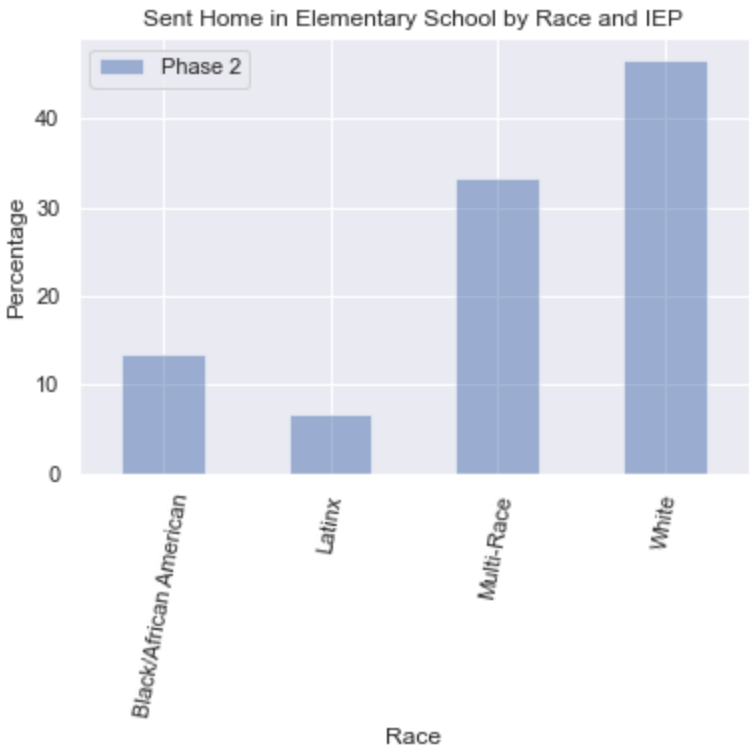


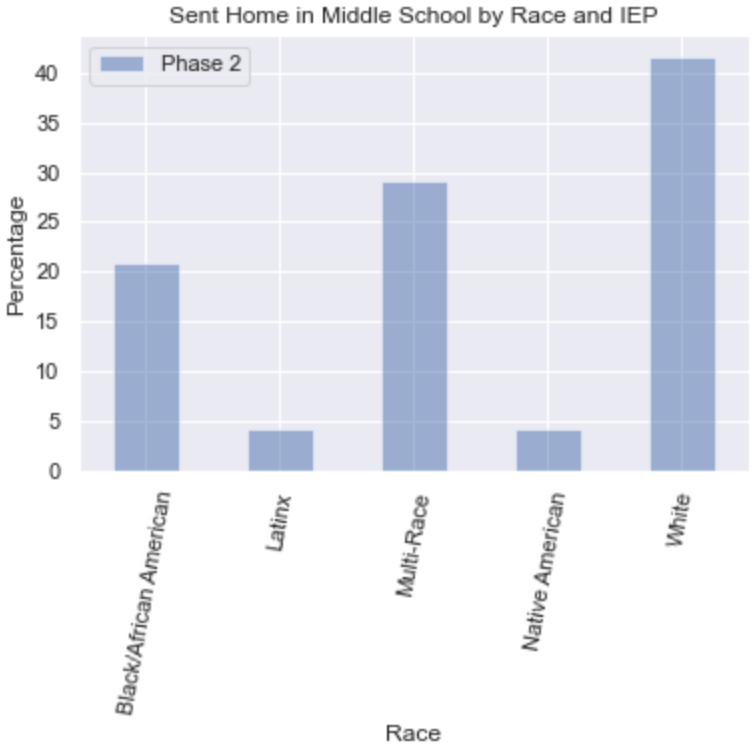
In [157…

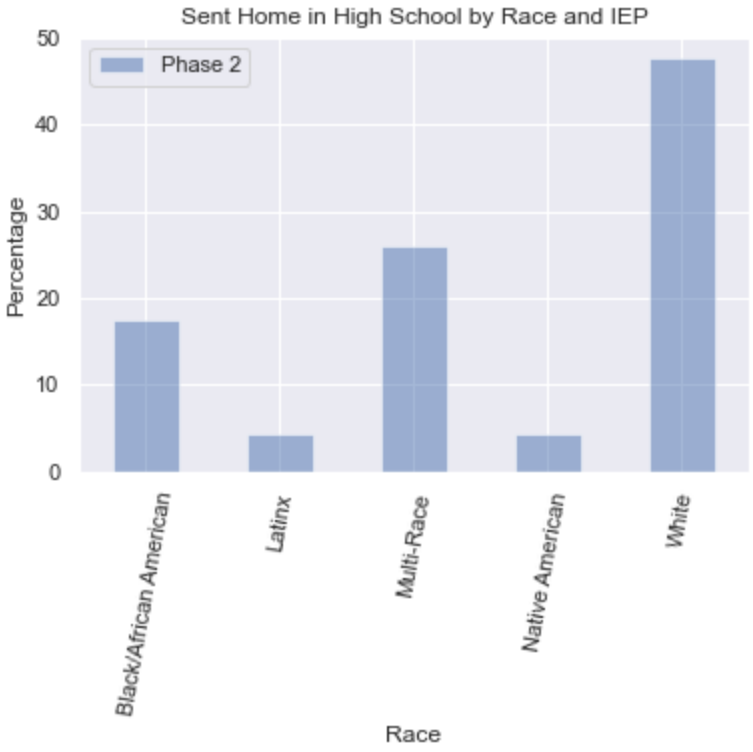
```
# sent home in elementary school by race and iep
plt.subplot(1, 1, 1)
sent_home_elem_and_race_iep.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Sent Home in Elementary School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# sent home in middle school by race and iep
plt.subplot(1,1,1)
sent_home_middle_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Sent Home in Middle School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# sent home in high school by race and iep
plt.subplot(1,1,1)
sent_home_high_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Sent Home in High School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Sent Home in Elementary School by Race and IEP
Phase 2
Percentage
0
10
20
30
40
Black/African American
Latinx
Multi-Race
White
Race


Sent Home in Middle School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
Black/African American
Latinx
Multi-Race
Native American
White
Race



11. People on an IEP, Suspended by Race

In [158…

```
# Phase 1
discipline2['61.1'] = discipline2['61.1'].replace(['Often','A few times','Once','A few tir
# suspended and race/iep combined values
suspended_elem_and_race_iep2 = discipline2.loc[(discipline2['61.1']=='Suspended') & (disci
suspended_elem_and_race_iep2 = (suspended_elem_and_race_iep2 / suspended_elem_and_race_iep
print('Suspended/IEP Elementary School',suspended_elem_and_race_iep2)

discipline2['61.2'] = discipline2['61.2'].replace(['Often','A few times','Once','A few tir
# suspended and race/iep combined values
suspended_middle_and_race_iep2 = discipline2.loc[(discipline2['61.2']=='Suspended') & (dis
suspended_middle_and_race_iep2 = (suspended_middle_and_race_iep2 / suspended_middle_and_ra
print('Suspended/IEP Middle School',suspended_middle_and_race_iep2)

discipline2['61.3'] = discipline2['61.3'].replace(['Often','A few times','Once','A few tir
# suspended and race/iep combined values
suspended_high_and_race_iep2 = discipline2.loc[(discipline2['61.3']=='Suspended') & (disci
suspended_high_and_race_iep2 = (suspended_high_and_race_iep2 / suspended_high_and_race_iep
print('Suspended/IEP High School',suspended_high_and_race_iep2)
```

```
Suspended/IEP Elementary School Phase 1 Race
Black/African American     21.052632
Latinx                     10.526316
Multi-Race                 31.578947
Prefer to self describe     5.263158
White                      31.578947
dtype: float64
Suspended/IEP Middle School Phase 1 Race
Black/African American     10.256410
Latinx                     12.820513
Multi-Race                 25.641026
Prefer to self describe     7.692308
White                      43.589744
dtype: float64
Suspended/IEP High School Phase 1 Race
Black/African American     11.904762
Latinx                      9.523810
Multi-Race                 23.809524
```

```
Prefer to self describe     4.761905
White                      50.000000
dtype: float64
```

In [159…

```
suspended_elem_and_race_iep2_count = discipline2.loc[(discipline2['61.1']=='Suspended') &
suspended_middle_and_race_iep2_count = discipline2.loc[(discipline2['61.2']=='Suspended')
suspended_high_and_race_iep2_count = discipline2.loc[(discipline2['61.3']=='Suspended') &
print('Suspended/IEP Elementary School',suspended_elem_and_race_iep2_count)
print('Suspended/IEP Middle School',suspended_middle_and_race_iep2_count)
print('Suspended/IEP High School',suspended_high_and_race_iep2_count)
```

```
Suspended/IEP Elementary School Phase 1 Race
Black/African American     4
Latinx                     2
Multi-Race                 6
Prefer to self describe    1
White                      6
dtype: int64
Suspended/IEP Middle School Phase 1 Race
Black/African American      4
Latinx                      5
Multi-Race                 10
Prefer to self describe     3
White                      17
dtype: int64
Suspended/IEP High School Phase 1 Race
Black/African American      5
Latinx                      4
Multi-Race                 10
Prefer to self describe     2
White                      21
dtype: int64
```

In [160…

```
# Phase 2
discipline['61.1'] = discipline['61.1'].replace(['Often','A few times','Once','A few times
# suspended and race/iep combined values
suspended_elem_and_race_iep = discipline.loc[(discipline['61.1']=='Suspended') & (discipli
suspended_elem_and_race_iep = (suspended_elem_and_race_iep / suspended_elem_and_race_iep.s
print('Suspended/IEP Elementary School',suspended_elem_and_race_iep)

discipline['61.2'] = discipline['61.2'].replace(['Often','A few times','Once','A few times
# suspended and race/iep combined values
suspended_middle_and_race_iep = discipline.loc[(discipline['61.2']=='Suspended') & (discip
suspended_middle_and_race_iep = (suspended_middle_and_race_iep / suspended_middle_and_race
print('Suspended/IEP Middle School',suspended_middle_and_race_iep)

discipline['61.3'] = discipline['61.3'].replace(['Often','A few times','Once','A few times
# suspended and race/iep combined values
suspended_high_and_race_iep = discipline.loc[(discipline['61.3']=='Suspended') & (discipli
suspended_high_and_race_iep = (suspended_high_and_race_iep / suspended_high_and_race_iep.s
print('Suspended/IEP High School',suspended_high_and_race_iep)
```

```
Suspended/IEP Elementary School Phase 2 Race
Black/African American    18.181818
Latinx                     9.090909
Multi-Race                36.363636
White                     36.363636
dtype: float64
Suspended/IEP Middle School Phase 2 Race
Black/African American    20.0
Latinx                     4.0
Multi-Race                32.0
Native American            4.0
White                     40.0
```

```
dtype: float64
Suspended/IEP High School Phase 2 Race
Black/African American    14.814815
Latinx                     3.703704
Multi-Race                25.925926
Native American            3.703704
White                     51.851852
dtype: float64
```

In [161…

```
suspended_elem_and_race_iep_count = discipline.loc[(discipline['61.1']=='Suspended') & (di
suspended_middle_and_race_iep_count = discipline.loc[(discipline['61.2']=='Suspended') &
suspended_high_and_race_iep_count = discipline.loc[(discipline['61.3']=='Suspended') & (di
print('Suspended/IEP Elementary School',suspended_elem_and_race_iep_count)
print('Suspended/IEP Middle School',suspended_middle_and_race_iep_count)
print('Suspended/IEP High School',suspended_high_and_race_iep_count)
```

```
Suspended/IEP Elementary School Phase 2 Race
Black/African American    2
Latinx                    1
Multi-Race                4
White                     4
dtype: int64
Suspended/IEP Middle School Phase 2 Race
Black/African American     5
Latinx                     1
Multi-Race                 8
Native American            1
White                     10
dtype: int64
Suspended/IEP High School Phase 2 Race
Black/African American     4
Latinx                     1
Multi-Race                 7
Native American            1
White                     14
dtype: int64
```

In [162…

```
suspended_elem_and_race_iep2.to_frame()
suspended_elem_and_race_iep.to_frame()
suspended_elem_iep = pd.concat([suspended_elem_and_race_iep2,suspended_elem_and_race_iep],
suspended_elem_iep.head()
```

Out[162…

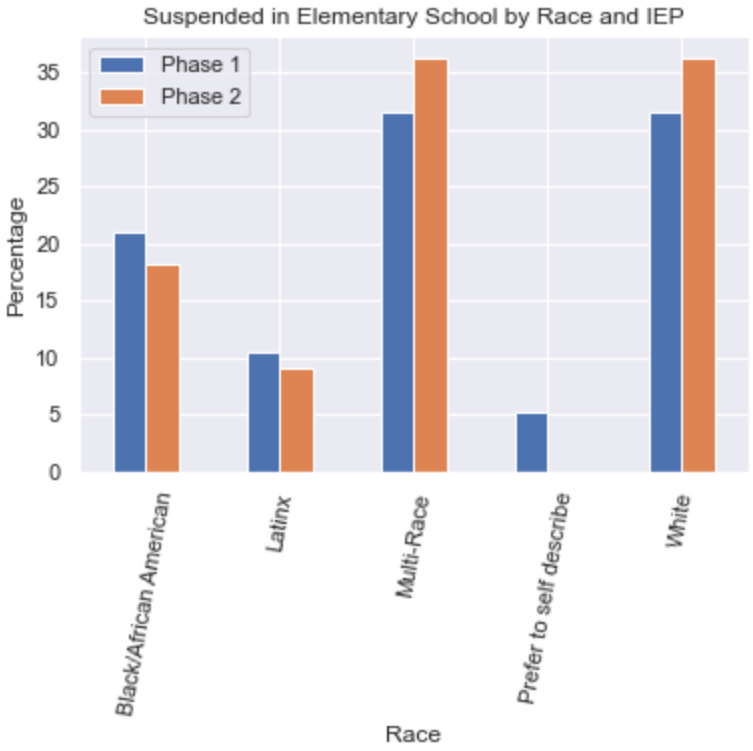
	0	1
Black/African American	21.052632	18.181818
Latinx	10.526316	9.090909
Multi-Race	31.578947	36.363636
Prefer to self describe	5.263158	NaN
White	31.578947	36.363636

In [163…

```
ax2 = suspended_elem_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in Elementary School by Race and IEP')
```

```
Text(0.5, 1.0, 'Suspended in Elementary School by Race and IEP')
```

Out[163…



In [164…

```
suspended_middle_and_race_iep2.to_frame()
suspended_middle_and_race_iep.to_frame()
suspended_middle_iep = pd.concat([suspended_middle_and_race_iep2,suspended_middle_and_race
suspended_middle_iep.head()
```

Out[164…

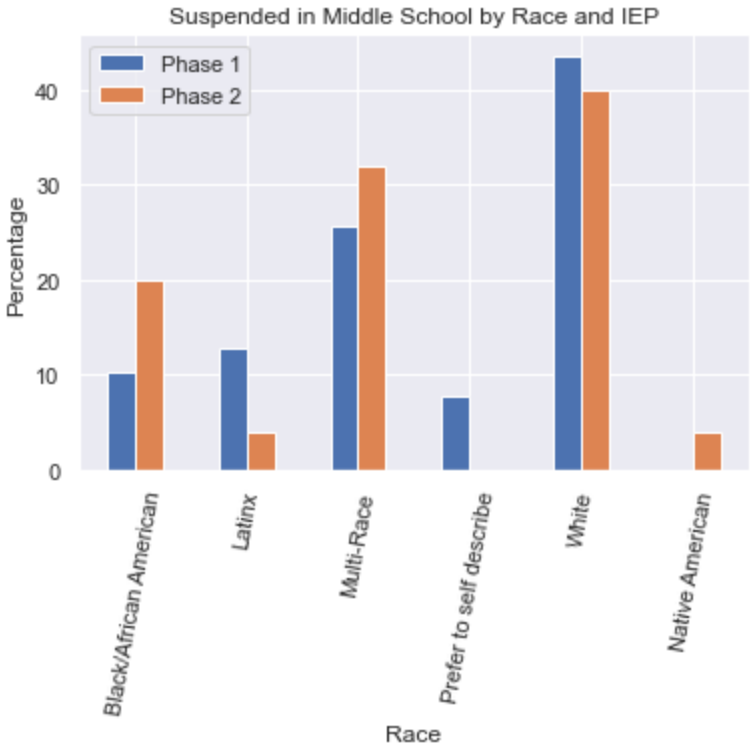
	0	1
Black/African American	10.256410	20.0
Latinx	12.820513	4.0
Multi-Race	25.641026	32.0
Prefer to self describe	7.692308	NaN
White	43.589744	40.0

In [165…

```
ax2 = suspended_middle_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in Middle School by Race and IEP')
```

Out[165…

```
Text(0.5, 1.0, 'Suspended in Middle School by Race and IEP')
```



In [166…

```
suspended_high_and_race_iep2.to_frame()
suspended_high_and_race_iep.to_frame()
suspended_high_iep = pd.concat([suspended_high_and_race_iep2,suspended_high_and_race_iep],
suspended_high_iep.head()
```

Out[166…

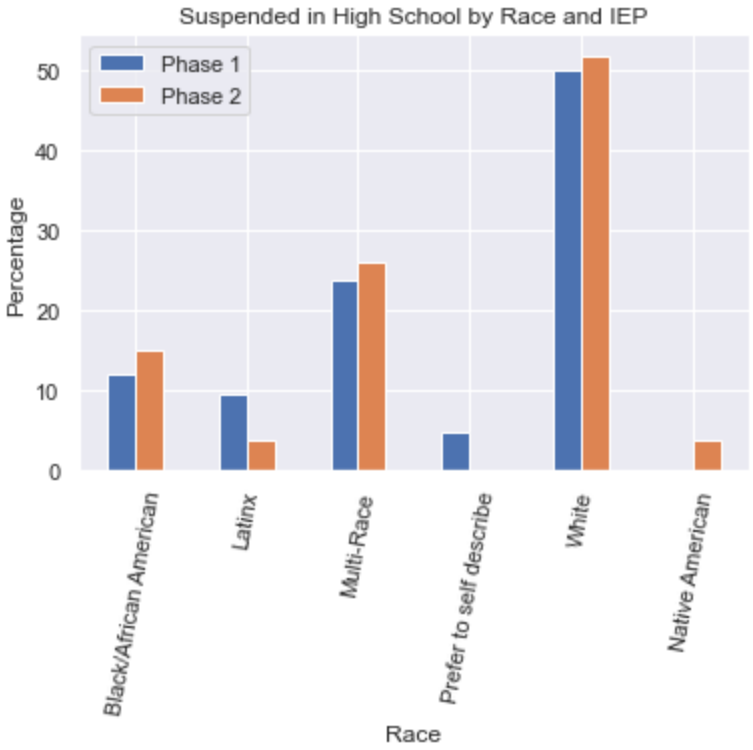
	0	1
Black/African American	11.904762	14.814815
Latinx	9.523810	3.703704
Multi-Race	23.809524	25.925926
Prefer to self describe	4.761905	NaN
White	50.000000	51.851852

In [167…

```
ax2 = suspended_high_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Suspended in High School by Race and IEP')
```

Out[167…

```
Text(0.5, 1.0, 'Suspended in High School by Race and IEP')
```

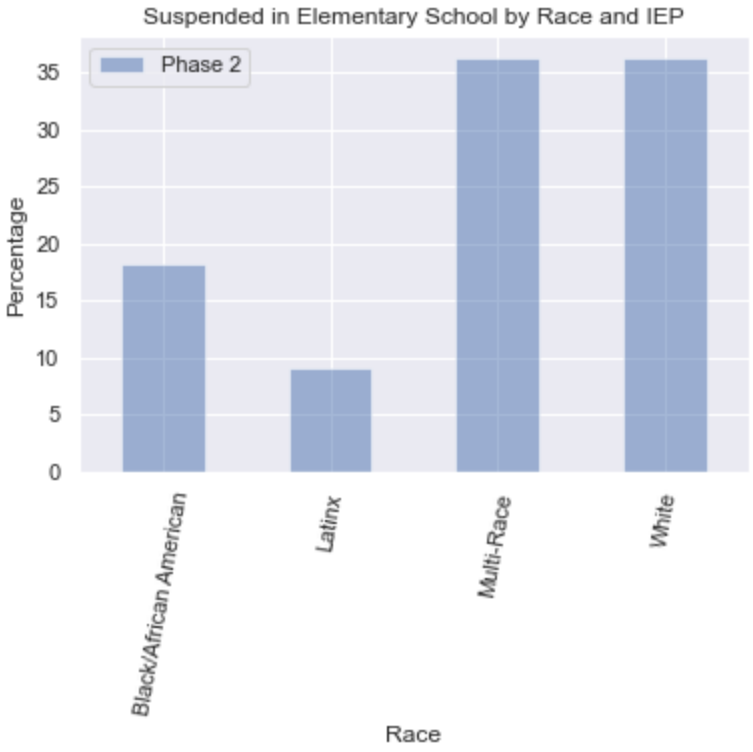


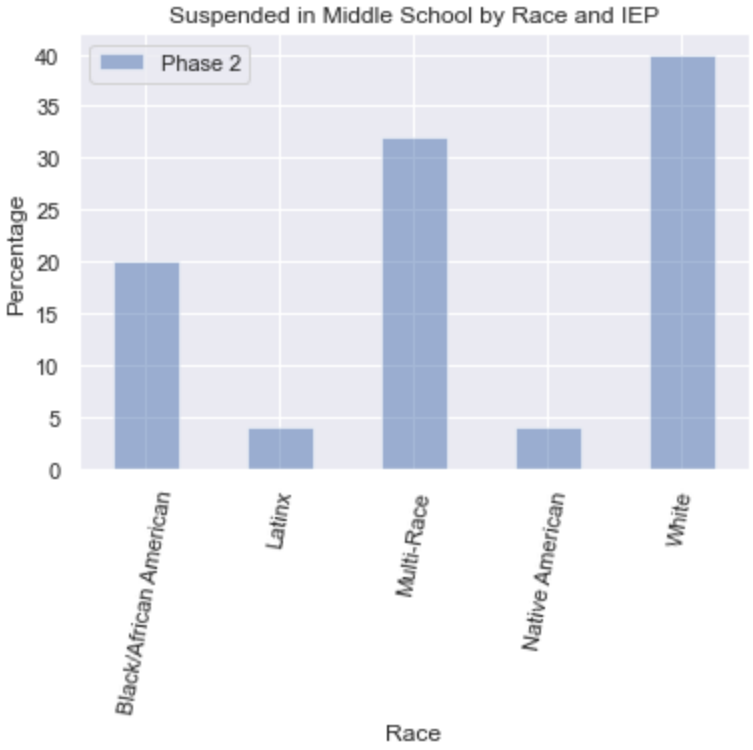
In [168…

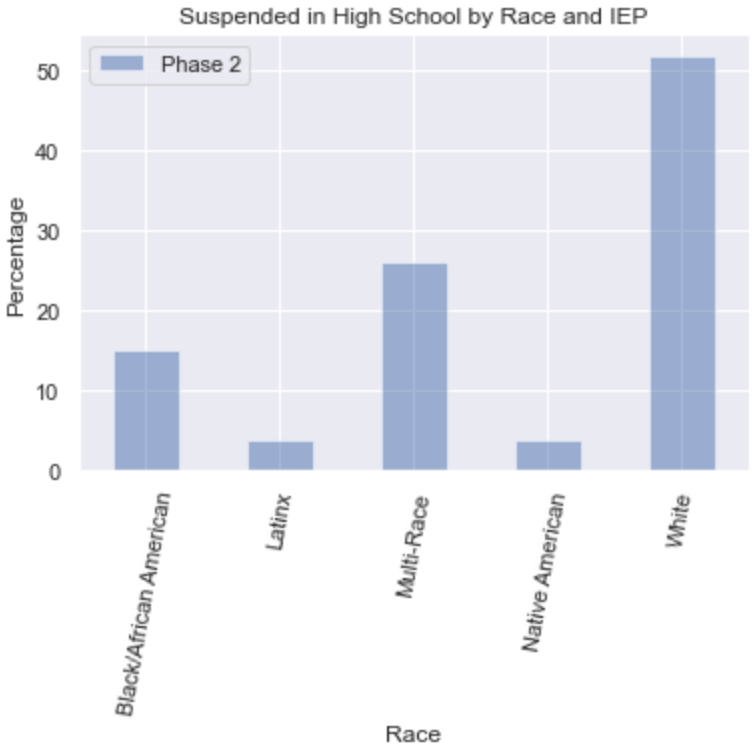
```
# suspended in elementary school by race and iep
plt.subplot(1, 1, 1)
suspended_elem_and_race_iep.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Suspended in Elementary School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# suspended in middle school by race and iep
plt.subplot(1,1,1)
suspended_middle_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Suspended in Middle School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# suspended in high school by race and iep
plt.subplot(1,1,1)
suspended_high_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Suspended in High School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Suspended in Elementary School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
White
Race


Suspended in Middle School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
Black/African American
Latinx
Multi-Race
Native American
White
Race



12. People on an IEP, Expelled by Race

In [169…

```
# Phase 1
discipline2['62.1'] = discipline2['62.1'].replace(['Yes','yes'], 'Expelled')
# expelled and race/iep combined values
expelled_elem_and_race_iep2 = discipline2.loc[(discipline2['62.1']=='Expelled') & (discipl
expelled_elem_and_race_iep2 = (expelled_elem_and_race_iep2 / expelled_elem_and_race_iep2.s
print('Expelled/IEP Elementary School',expelled_elem_and_race_iep2)

discipline2['62.2'] = discipline2['62.2'].replace(['Yes','yes'], 'Expelled')
# expelled and race/iep combined values
expelled_middle_and_race_iep2 = discipline2.loc[(discipline2['62.2']=='Expelled') & (disci
expelled_middle_and_race_iep2 = (expelled_middle_and_race_iep2 / expelled_middle_and_race_
print('Expelled/IEP Middle School',expelled_middle_and_race_iep2)

discipline2['62.3'] = discipline2['62.3'].replace(['Yes','yes'], 'Expelled')
# expelled and race/iep combined values
expelled_high_and_race_iep2 = discipline2.loc[(discipline2['62.3']=='Expelled') & (discipl
expelled_high_and_race_iep2 = (expelled_high_and_race_iep2 / expelled_high_and_race_iep2.s
print('Expelled/IEP High School',expelled_high_and_race_iep2)
```

```
Expelled/IEP Elementary School Phase 1 Race
Black/African American     20.000000
Latinx                      6.666667
Multi-Race                 26.666667
Prefer to self describe    13.333333
White                      33.333333
dtype: float64
Expelled/IEP Middle School Phase 1 Race
Black/African American     22.727273
Latinx                      4.545455
Multi-Race                 27.272727
Prefer to self describe     9.090909
White                      36.363636
dtype: float64
Expelled/IEP High School Phase 1 Race
Black/African American     24.242424
Latinx                      6.060606
Multi-Race                  9.090909
```

```
Prefer to self describe     6.060606
White                      54.545455
dtype: float64
```

In [170…

```
expelled_elem_and_race_iep2_count = discipline2.loc[(discipline2['62.1']=='Expelled') & (d
expelled_middle_and_race_iep2_count = discipline2.loc[(discipline2['62.2']=='Expelled') &
expelled_high_and_race_iep2_count = discipline2.loc[(discipline2['62.3']=='Expelled') & (d
print('Expelled/IEP Elementary School',expelled_elem_and_race_iep2_count)
print('Expelled/IEP Middle School',expelled_middle_and_race_iep2_count)
print('Expelled/IEP High School',expelled_high_and_race_iep2_count)
```

```
Expelled/IEP Elementary School Phase 1 Race
Black/African American     3
Latinx                     1
Multi-Race                 4
Prefer to self describe    2
White                      5
dtype: int64
Expelled/IEP Middle School Phase 1 Race
Black/African American     5
Latinx                     1
Multi-Race                 6
Prefer to self describe    2
White                      8
dtype: int64
Expelled/IEP High School Phase 1 Race
Black/African American      8
Latinx                      2
Multi-Race                  3
Prefer to self describe     2
White                      18
dtype: int64
```

In [171…

```
# Phase 2
discipline['62.1'] = discipline['62.1'].replace(['Yes','yes'], 'Expelled')
# expelled and race/iep combined values
expelled_elem_and_race_iep = discipline.loc[(discipline['62.1']=='Expelled') & (discipline
expelled_elem_and_race_iep = (expelled_elem_and_race_iep / expelled_elem_and_race_iep.sum
print('Expelled/IEP Elementary School',expelled_elem_and_race_iep)

discipline['62.2'] = discipline['62.2'].replace(['Yes','yes'], 'Expelled')
# expelled and race/iep combined values
expelled_middle_and_race_iep = discipline.loc[(discipline['62.2']=='Expelled') & (discipli
expelled_middle_and_race_iep = (expelled_middle_and_race_iep / expelled_middle_and_race_ie
print('Expelled/IEP Middle School',expelled_middle_and_race_iep)

discipline['62.3'] = discipline['62.3'].replace(['Yes','yes'], 'Expelled')
# expelled and race/iep combined values
expelled_high_and_race_iep = discipline.loc[(discipline['62.3']=='Expelled') & (discipline
expelled_high_and_race_iep = (expelled_high_and_race_iep / expelled_high_and_race_iep.sum
print('Expelled/IEP High School',expelled_high_and_race_iep)
```

```
Expelled/IEP Elementary School Phase 2 Race
Black/African American    33.333333
Latinx                    33.333333
Multi-Race                33.333333
dtype: float64
Expelled/IEP Middle School Phase 2 Race
Black/African American    20.0
Latinx                    20.0
Multi-Race                20.0
White                     40.0
dtype: float64
Expelled/IEP High School Phase 2 Race
```

```
Black/African American     8.333333
Latinx                     8.333333
Multi-Race                33.333333
Native American            8.333333
White                     41.666667
dtype: float64
```

In [173…

```
expelled_elem_and_race_iep_count = discipline.loc[(discipline['62.1']=='Expelled') & (disc
expelled_middle_and_race_iep_count = discipline.loc[(discipline['62.2']=='Expelled') & (di
expelled_high_and_race_iep_count = discipline.loc[(discipline['62.3']=='Expelled') & (disc
print('Expelled/IEP Elementary School',expelled_elem_and_race_iep_count)
print('Expelled/IEP Middle School',expelled_middle_and_race_iep_count)
print('Expelled/IEP High School',expelled_high_and_race_iep_count)
```

```
Expelled/IEP Elementary School Phase 2 Race
Black/African American    1
Latinx                    1
Multi-Race                1
dtype: int64
Expelled/IEP Middle School Phase 2 Race
Black/African American    1
Latinx                    1
Multi-Race                1
White                     2
dtype: int64
Expelled/IEP High School Phase 2 Race
Black/African American    1
Latinx                    1
Multi-Race                4
Native American           1
White                     5
dtype: int64
```

In [174…

```
expelled_elem_and_race_iep2.to_frame()
expelled_elem_and_race_iep.to_frame()
expelled_elem_iep = pd.concat([expelled_elem_and_race_iep2,expelled_elem_and_race_iep],axi
expelled_elem_iep.head()
```

Out[174…

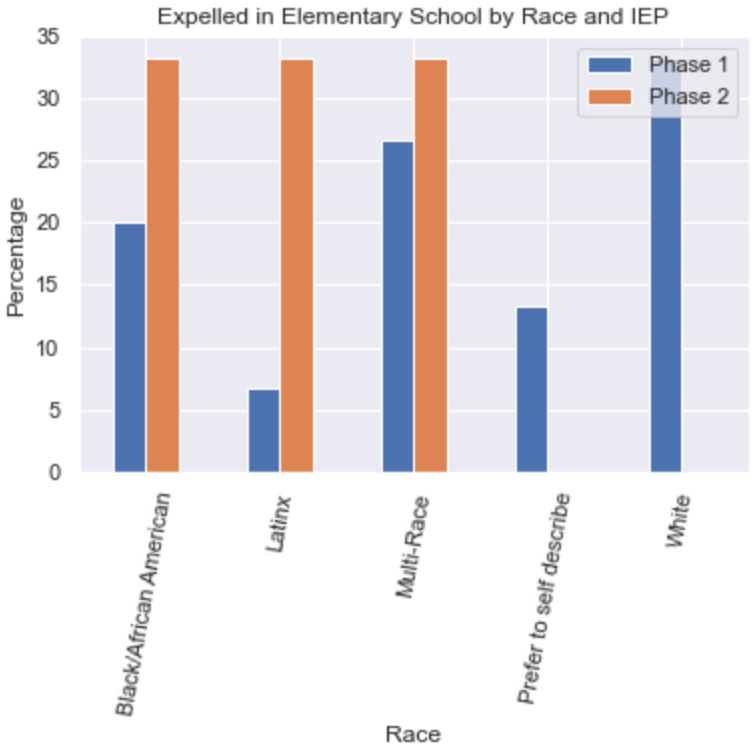
	0	1
Black/African American	20.000000	33.333333
Latinx	6.666667	33.333333
Multi-Race	26.666667	33.333333
Prefer to self describe	13.333333	NaN
White	33.333333	NaN

In [175…

```
ax2 = expelled_elem_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in Elementary School by Race and IEP')
```

Out[175…

```
Text(0.5, 1.0, 'Expelled in Elementary School by Race and IEP')
```



In [176…

```
expelled_middle_and_race_iep2.to_frame()
expelled_middle_and_race_iep.to_frame()
expelled_middle_iep = pd.concat([expelled_middle_and_race_iep2,expelled_middle_and_race_ie
expelled_middle_iep.head()
```

Out[176…

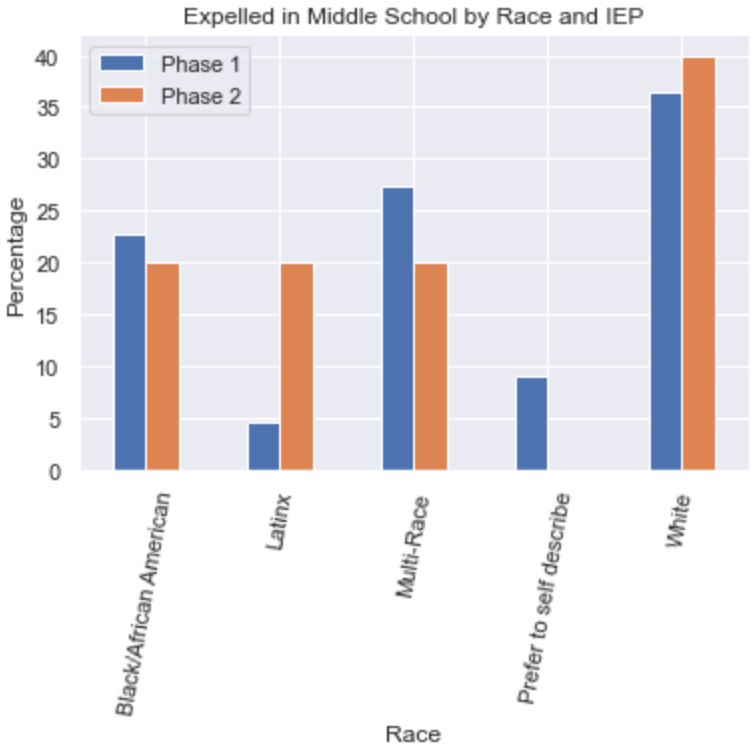
	0	1
Black/African American	22.727273	20.0
Latinx	4.545455	20.0
Multi-Race	27.272727	20.0
Prefer to self describe	9.090909	NaN
White	36.363636	40.0

In [177…

```
ax2 = expelled_middle_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in Middle School by Race and IEP')
```

Out[177…

```
Text(0.5, 1.0, 'Expelled in Middle School by Race and IEP')
```



In [178…

```
expelled_high_and_race_iep2.to_frame()
expelled_high_and_race_iep.to_frame()
expelled_high_iep = pd.concat([expelled_high_and_race_iep2,expelled_high_and_race_iep],axi
expelled_high_iep.head()
```

Out[178…

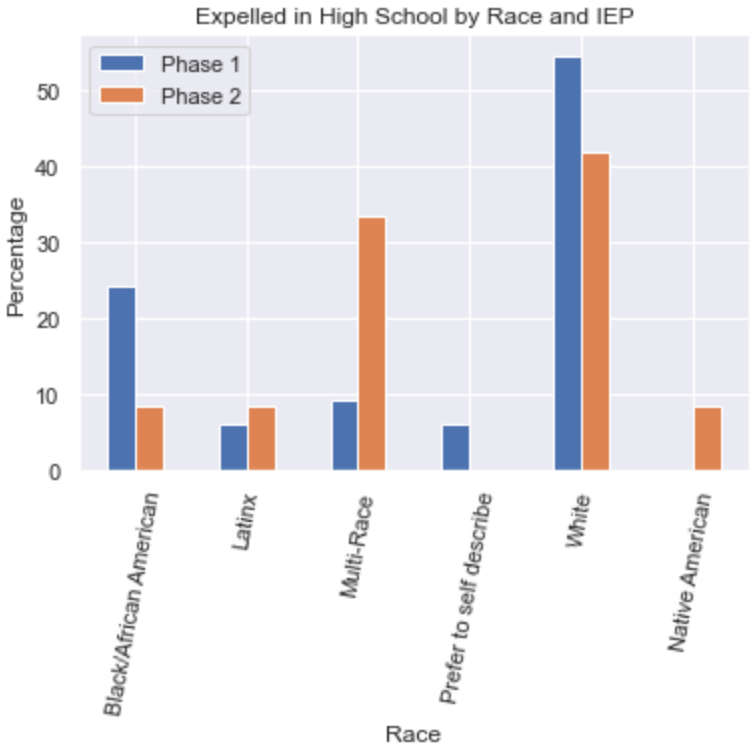
	0	1
Black/African American	24.242424	8.333333
Latinx	6.060606	8.333333
Multi-Race	9.090909	33.333333
Prefer to self describe	6.060606	NaN
White	54.545455	41.666667

In [179…

```
ax2 = expelled_high_iep.plot.bar(rot=0)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.xticks(rotation = 80)
L=plt.legend()
L.get_texts()[0].set_text('Phase 1')
L.get_texts()[1].set_text('Phase 2')
plt.title('Expelled in High School by Race and IEP')
```

Out[179…

```
Text(0.5, 1.0, 'Expelled in High School by Race and IEP')
```

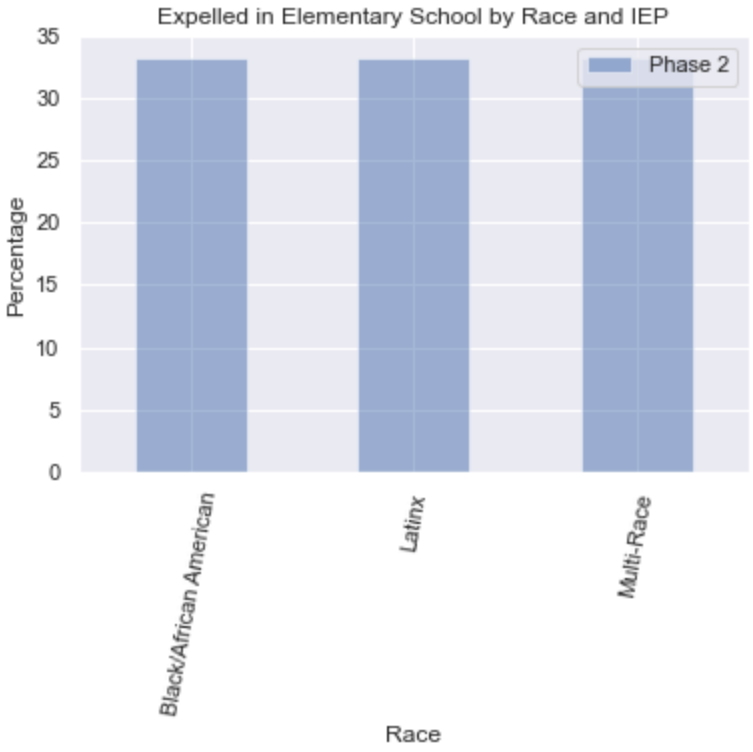


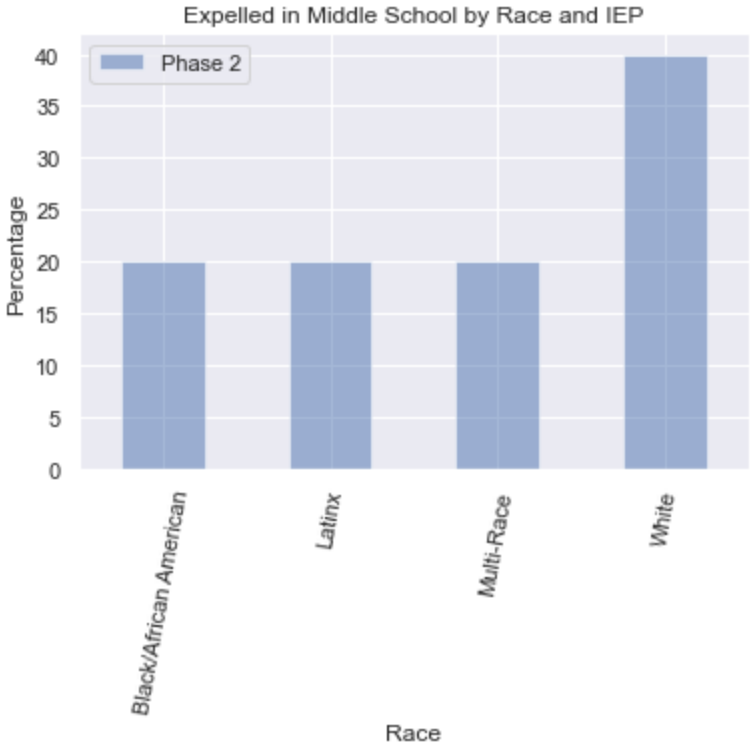
In [180…

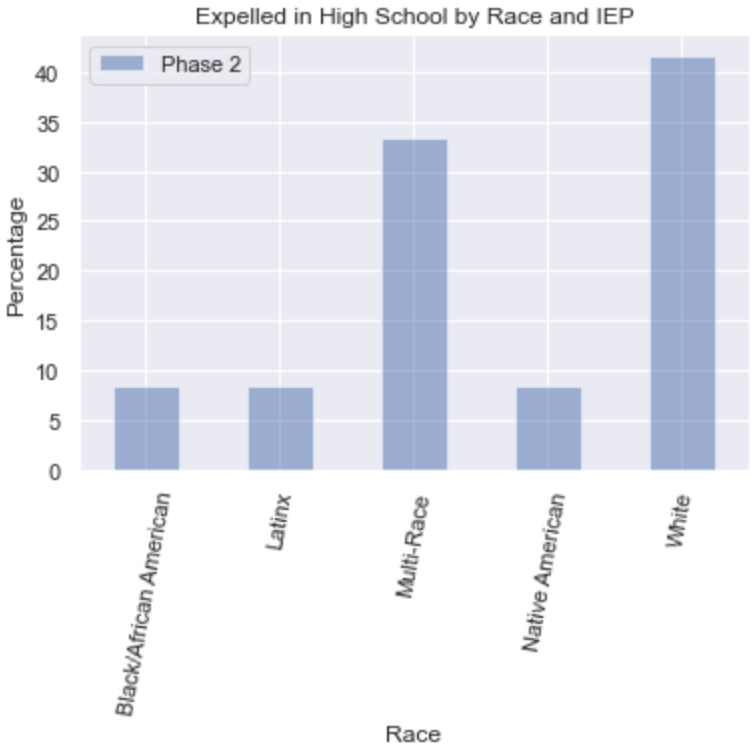
```
# expelled in elementary school by race and iep
plt.subplot(1, 1, 1)
expelled_elem_and_race_iep.plot(kind='bar', legend=True, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Expelled in Elementary School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# expelled in middle school by race and iep
plt.subplot(1,1,1)
expelled_middle_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Expelled in Middle School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()

# expelled in high school by race and iep
plt.subplot(1,1,1)
expelled_high_and_race_iep.plot(kind='bar', legend=False, alpha=.5)
plt.xlabel('Race')
plt.ylabel('Percentage')
plt.title('Expelled in High School by Race and IEP')
L=plt.legend()
L.get_texts()[0].set_text('Phase 2')
plt.xticks(rotation = 80)
plt.show()
```


Expelled in Elementary School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
Black/African American
Latinx
Multi-Race
Race


Expelled in Middle School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
Black/African American
Latinx
Multi-Race
White
Race


Expelled in High School by Race and IEP
Phase 2
Percentage
0
5
10
15
20
25
30
35
40
Black/African American
Latinx
Multi-Race
Native American
White
Race