```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

In [12]: %matplotlib inline

Out[13]:

state	reading	math	writing	percent_graduates_sat	pupil_staff_ratio	dropout_rate
United States	501	515	493	46	7.9	4.4
Alabama	557	552	549	7	6.7	2.0
Alaska	520	516	492	46	7.9	7.:
Arizona	516	521	497	26	10.4	7.6
Arkansas	572	572	556	5	6.8	4.6
California	500	513	498	49	10.9	5.
Colorado	568	575	555	20	8.1	6.9
Connecticut	509	513	512	83	6.6	2.
Delaware	495	498	484	71	7.9	5.
District of Columbia	466	451	461	79	6.3	7.
Florida	497	498	480	59	8.1	3.8
Georgia	490	491	479	71	7.0	4.6
Hawaii	479	502	469	58	8.3	5.4
Idaho	541	540	520	18	10.0	2.6
Illinois	588	604	583	6	9.9	4.(
Indiana	496	507	480	63	7.5	2.7
Iowa	610	615	588	3	6.8	2.:
Kansas	581	589	564	7	8.6	2.7
Kentucky	573	573	561	7	6.6	3.0
Louisiana	563	558	555	7	6.8	7.4
Maine	468	467	455	90	4.9	5.0
Maryland	500	502	495	69	7.2	3.8
	United States Alabama Alaska Arizona Arkansas California Colorado Connecticut Delaware District of Columbia Florida Georgia Hawaii Idaho Illinois Indiana Iowa Kansas Kentucky Louisiana Maine	United States 501 Alabama 557 Alaska 520 Arizona 516 Arkansas 572 California 500 Colorado 568 Connecticut 509 Delaware 495 District of Columbia 466 Florida 497 Georgia 490 Hawaii 479 Idaho 541 Illinois 588 Indiana 496 Iowa 610 Kansas 581 Kentucky 573 Louisiana 563 Maine 468	United States 501 515 Alabama 557 552 Alaska 520 516 Arizona 516 521 Arkansas 572 572 California 500 513 Colorado 568 575 Connecticut 509 513 Delaware 495 498 District of Columbia 466 451 Florida 497 498 Georgia 490 491 Hawaii 479 502 Idaho 541 540 Illinois 588 604 Indiana 496 507 Iowa 610 615 Kansas 581 589 Kentucky 573 573 Louisiana 563 558 Maine 468 467	United States 501 515 493 Alabama 557 552 549 Alaska 520 516 492 Arizona 516 521 497 Arkansas 572 572 556 California 500 513 498 Colorado 568 575 555 Connecticut 509 513 512 Delaware 495 498 484 District of Columbia 466 451 461 Florida 497 498 480 Georgia 490 491 479 Hawaii 479 502 469 Idaho 541 540 520 Illinois 588 604 583 Indiana 496 507 480 Iowa 610 615 588 Kansas 581 589 564 Kentucky 573 573 561 Louisiana 563 558 555 Maine	United States 501 515 493 46 Alabama 557 552 549 7 Alaska 520 516 492 46 Arizona 516 521 497 26 Arkansas 572 572 556 5 California 500 513 498 49 Colorado 568 575 555 20 Connecticut 509 513 512 83 Delaware 495 498 484 71 District of Columbia 466 451 461 79 Florida 497 498 480 59 Georgia 490 491 479 71 Hawaii 479 502 469 58 Idaho 541 540 520 18 Illinois 588 604 583 6 Indiana 496 507 480 63 Indiana 610 615 588 3 Kans	Alabama 557 552 549 7 6.7 Alaska 520 516 492 46 7.9 Arizona 516 521 497 26 10.4 Arkansas 572 572 556 5 6.8 California 500 513 498 49 10.9 Colorado 568 575 555 20 8.1 Connecticut 509 513 512 83 6.6 Delaware 495 498 484 71 7.9 District of Columbia 466 451 461 79 6.3 Florida 497 498 480 59 8.1 Georgia 490 491 479 71 7.0 Hawaii 479 502 469 58 8.3 Idaho 541 540 520 18 10.0 Illinois 588 604 583 6 9.9 Indiana 496 507 480 63

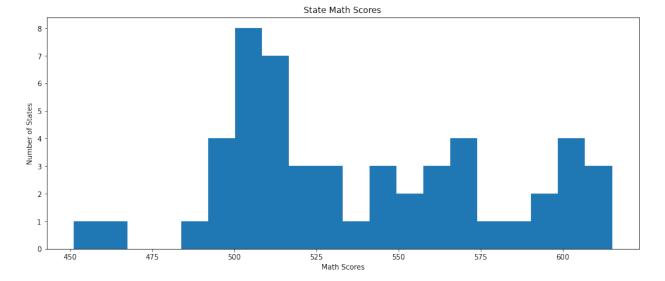
22	Massachusetts	514	526	510	84	7.8	3.8
23	Michigan	584	603	575	5	8.1	7.4
24	Minnesota	595	609	578	7	7.7	3.0
25	Mississippi	567	554	559	4	6.9	4.0
26	Missouri	595	600	584	5	6.9	3.7
27	Montana	541	542	519	22	7.4	3.7
28	Nebraska	587	594	572	4	6.7	2.8
29	Nevada	501	505	479	42	12.1	4.!
30	New Hampshire	523	523	510	75	6.2	3.2
31	New Jersey	496	513	496	76	6.9	2.0
32	New Mexico	553	546	534	11	7.0	6.
33	New York	485	502	478	85	7.4	5.0
34	North Carolina	495	511	480	63	7.3	5.7
35	North Dakota	590	593	566	3	6.2	2.:
36	Ohio	537	546	523	22	7.5	4.!
37	Oklahoma	575	571	557	5	7.4	3.
38	Oregon	523	525	499	52	8.8	4.6
39	Pennsylvania	493	501	483	71	7.1	-1.(
40	Rhode Island	498	496	494	66	8.4	5.8
41	South Carolina	486	496	470	67	10.8	3.9
42	South Dakota	589	600	569	3	7.1	3.9
43	Tennessee	571	565	565	10	7.6	3.
44	Texas	486	506	475	51	7.4	4.0
45	Utah	559	558	540	6	11.9	3.
46	Vermont	518	518	506	64	4.9	-1.(
47	Virginia	511	512	498	68	6.0	2.6
48	Washington	524	531	507	53	9.9	5. ⁻
49	West Virginia	511	501	499	18	7.4	4.(
50	Wisconsin	594	608	582	5	8.3	2.2
51	Wyoming	567	568	550	5	5.6	5.

```
In [14]: math=df['math']
           math
Out[14]: 0
                  515
           1
                  552
           2
                  516
           3
                  521
           4
                  572
           5
                  513
           6
                  575
          7
                  513
           8
                  498
           9
                  451
           10
                  498
           11
                  491
           12
                  502
           13
                  540
           14
                  604
           15
                  507
           16
                  615
           17
                  589
           18
                  573
           19
                  558
           20
                  467
           21
                  502
           22
                  526
           23
                  603
           24
                  609
           25
                  554
           26
                  600
           27
                  542
           28
                  594
           29
                  505
           30
                  523
           31
                  513
           32
                  546
           33
                  502
           34
                  511
           35
                  593
           36
                  546
           37
                  571
           38
                  525
           39
                  501
           40
                  496
           41
                  496
           42
                  600
           43
                  565
           44
                  506
           45
                  558
           46
                  518
```

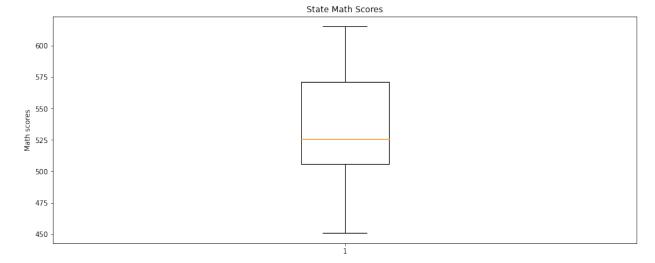
```
47 512
48 531
49 501
50 608
51 568
```

Name: math, dtype: int64

```
In [15]: plt.figure(figsize=(15, 6))
   plt.hist(math, bins=20)
   plt.title('State Math Scores')
   plt.xlabel('Math Scores')
   plt.ylabel('Number of States')
   plt.show()
```



```
In [16]: plt.figure(figsize=(15, 6))
   plt.boxplot(math)
   plt.title('State Math Scores')
   plt.ylabel('Math scores')
   plt.show()
```



```
In [19]: palette = sns.color_palette("Blues_r", len(math))
```

```
In [25]: read= df['reading']
write=df['writing']
```

400

500

600

300

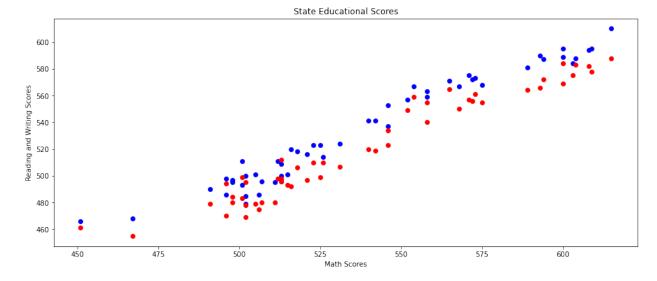
Math Scores -

Ò

100

200

```
In [26]: plt.figure(figsize=(15, 6))
  plt.scatter(math,read,c='b',label='Math Scores Versus Reading Scores')
  plt.scatter(math,write,c='r',label='Math Scores Versus Writing Scores')
  plt.title('State Educational Scores')
  plt.xlabel('Math Scores')
  plt.ylabel('Reading and Writing Scores')
  plt.show()
```



```
In [ ]:
```