Algebra 1

Take Home Test 204: Statistics and Probability

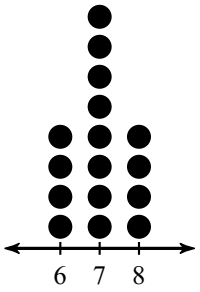
Draw a dot plot for each data set.

1) Hours Slept

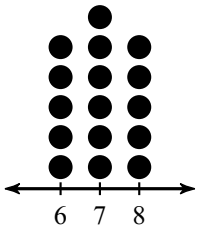
7 7 7 8 6 7 8 7

6 7 6 7 8 6 8 7

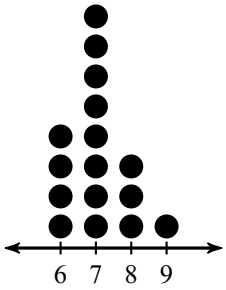
A)



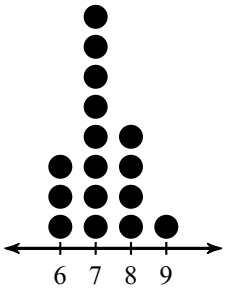
B)



C)



D)



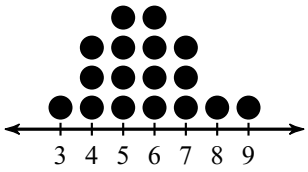
2) Goals in a Hockey Game

5 2 5 5 6 7 8 3

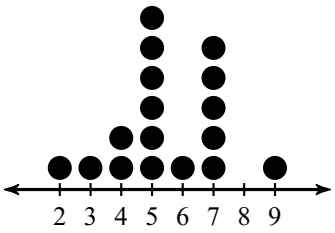
5 5 7 8 7 5 4 5

5

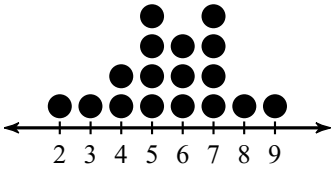
A)



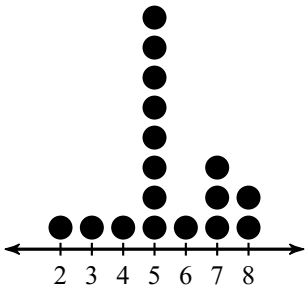
B)



C)



D)



3) Sales Tax

State	Percent
Alaska	0
Maryland	6
Arizona	6
Utah	5

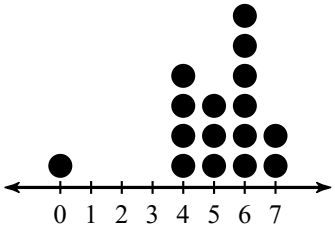
State	Percent
Rhode Island	7
Alabama	4
New Jersey	7

State	Percent
Connecticut	6
New York	4
Florida	6

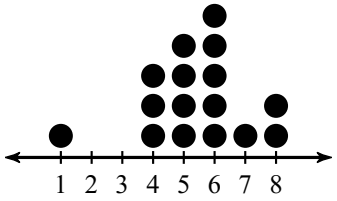
State	Percent
North Carolina	5
Idaho	6
Hawaii	4

State	Percent
Louisiana	4
Texas	6
Michigan	6

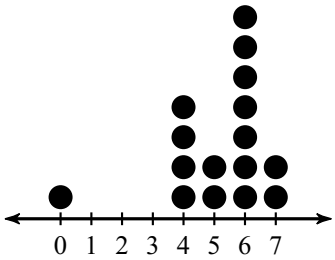
A)



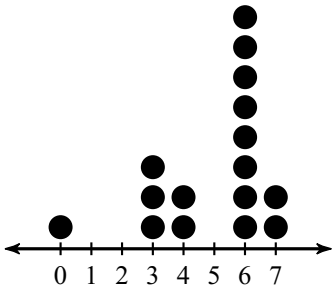
B)



C)



D)



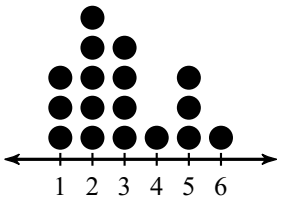
4) Birth Rate

Country	Births/woman
Central African Rep.	4
Grenada	2
Jamaica	2
Liberia	5
Benin	5
Canada	2

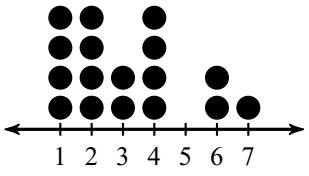
Country	Births/woman
Mali	6
Bangladesh	2
Switzerland	2
Belgium	2
Suriname	2
Bolivia	3

Country	Births/woman
Japan	1
Micronesia	3
Afghanistan	5
Belarus	1
Taiwan	1

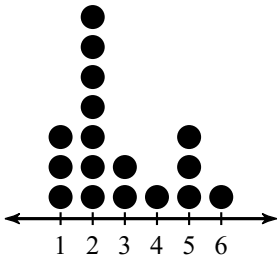
A)



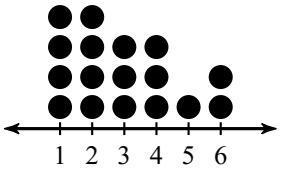
B)



C)



D)



Draw a box-and-whisker plot for each data set.

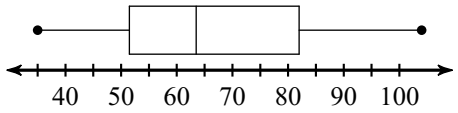
5) Average Time to Maturity

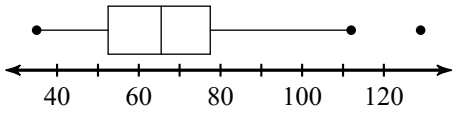
Plant	Days
Spinach	44
Kale	60
Artichoke	95
Sugar Baby Watermelon	75

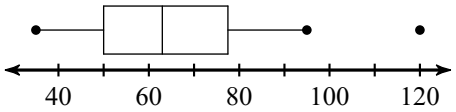
Plant	Days
Cherry Tomato	65
Turnip	55
Arugula	35
Mustard	37

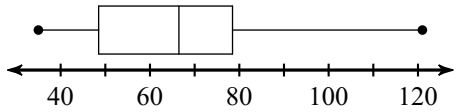
Plant	Days
Peanut	120
Red Potato	80
Cauliflower	62
Bok Choi	45

Plant	Days
Cheyenne Pepper	64
Purple King Bean	75
Okra	55
Radicchio	90

A) 

B) 

C) 

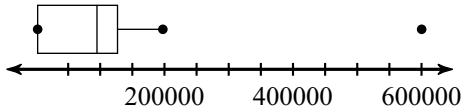
D) 

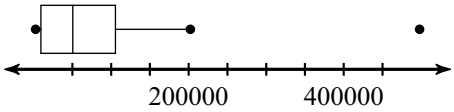
6) Campers at National Parks

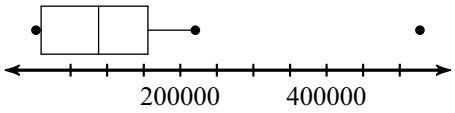
Park	Tent Campers
Wind Cave	5,582
Buffalo River	19,092
Lake Roosevelt	59,259
Yellowstone	84,328
Chaco Culture	7,496
Bandelier	4,385

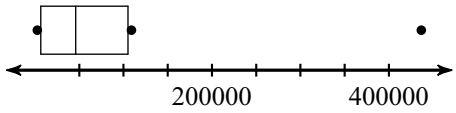
Park	Tent Campers
Death Valley	51,247
Grand Canyon	105,670
Cape Hatteras	40,952
Olympic	104,524
Zion	106,837

Park	Tent Campers
Cumberland Island	12,091
Acadia	109,030
Natural Bridges	3,643
Organ Pipe Cactus	2,580
Yosemite	436,617

A) 

B) 

C) 

D) 

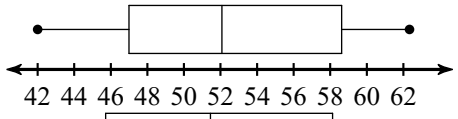
7) Age Assumed Office

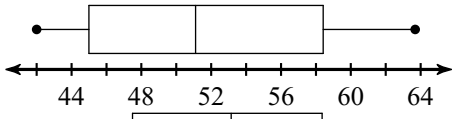
Senator	Age
Jeff Flake	50
Tim Scott	47
Dick Durbin	52
Mark Begich	46

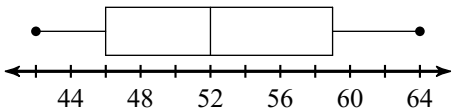
Senator	Age
Dianne Feinstein	59
John Thune	43
Orrin Hatch	42
Jeanne Shaheen	61

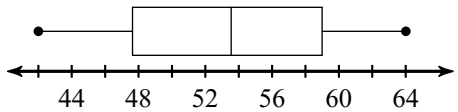
Senator	Age
Lisa Murkowski	45
Richard Blumenthal	64
Tom Coburn	56
Johnny Isakson	60

Senator	Age
Bob Menendez	52
Barbara Boxer	52
Jay Rockefeller	47

A) 

B) 

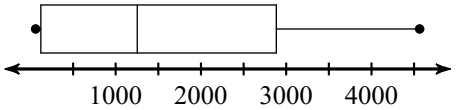
C) 

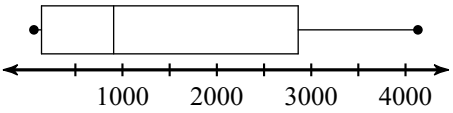
D) 

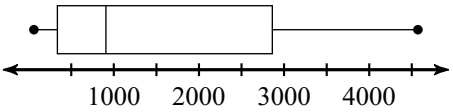
8) Boiling Point

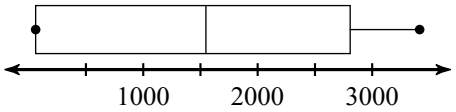
Substance	°C
Iodine	184.3
Potassium	758.8
Water	100
Sea Water	100.7
Lead	1,750
Calcium	1,484
Uranium	4,131
Nickel	2,913
Zinc	907

Substance	°C
Chloroform	61.2
Titanium	3,287
Aluminum	2,519
Sodium	882.8
Methanol	64.7
Glycerol	290
Cobalt	2,870
Gold	2,856

A)


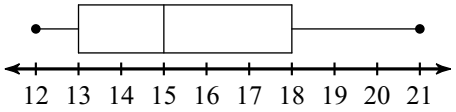
B)


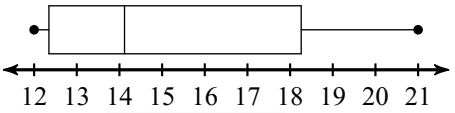
C)


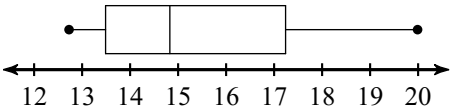
D)


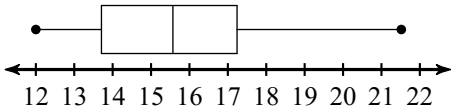
9) Age at First Job

13 14 21 18 12 19 15
15 15 16 18 14 13 12
18

A)


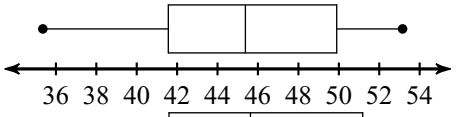
B)


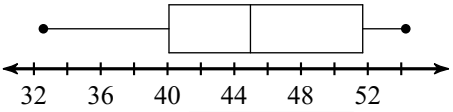
C)


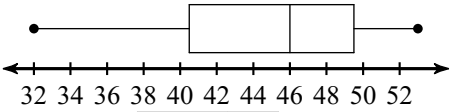
D)


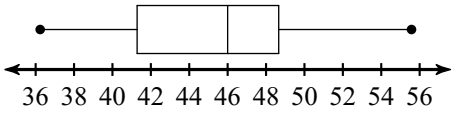
10) Test Scores

44 48 38 46 51 32 46
50 43 53 49 39 46 48
42 39 53

A)


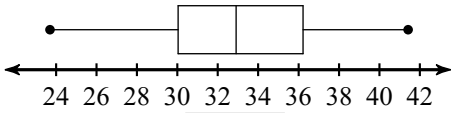
B)


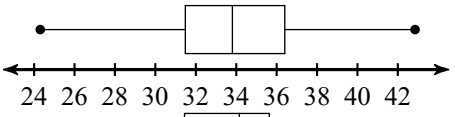
C)


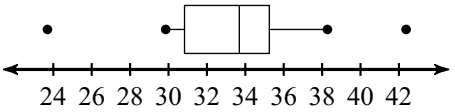
D)


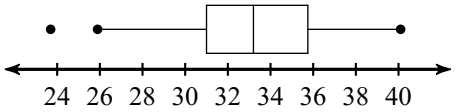
11) Minutes to Run 5km

33.4 34.1 36.2 23.7 40.1
36.9 32.7 33 31.7 35.3
38.4 34.9 25.9 32.8 30.3
28.9

A)


B)


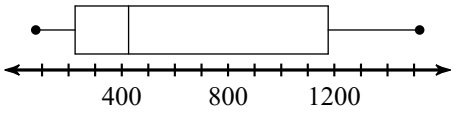
C)


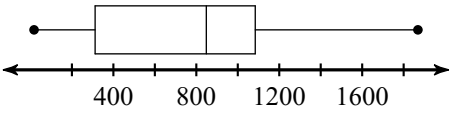
D)


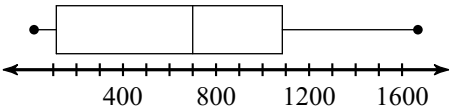
12) Melting Point

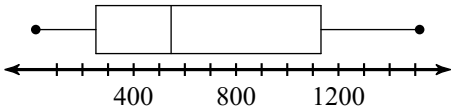
Substance	°C
Uranium	1,132
Sulphur	115.2
Aluminum	660.3
Nickel	1,455
Copper	1,085
Calcium	842
Iodine	113.7
Titanium	1,668

Substance	°C
Radium	699.8
Gold	1,064
Glycerol	17.8
Potassium	63.4
Sodium	97.7
Lead	327.5
Silver	961.8

A)


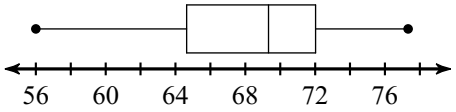
B)


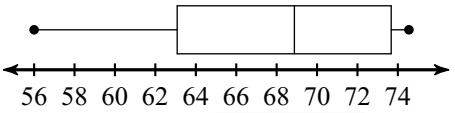
C)


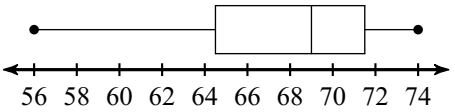
D)


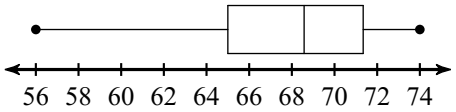
13) Mens Heights (Inches)

63	59	71	63	72	56	67
73	70	70	67	69	74	67
71	72	66				

A)


B)


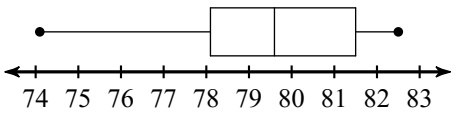
C)


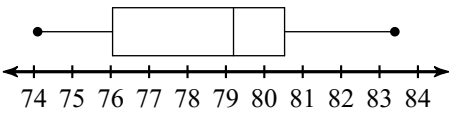
D)


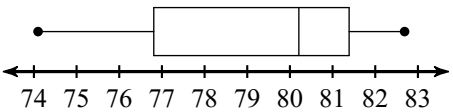
14) Life Expectancy

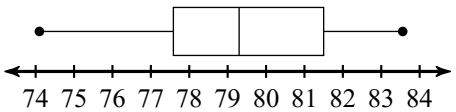
State	Years
Virginia	82.5
Utah	82.2
Montana	74.1
Arizona	79.3
Texas	80.3
Alabama	78.1
Vermont	80.4
Missouri	75.9

State	Years
North Carolina	79.6
Illinois	81.5
Colorado	80.9
South Carolina	78.3
West Virginia	74.1
Oregon	82
Michigan	79.2

A)


B)


C)


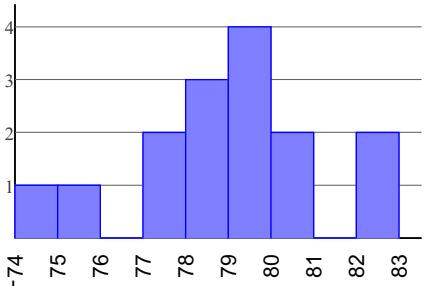
D)


Draw a histogram for each data set.

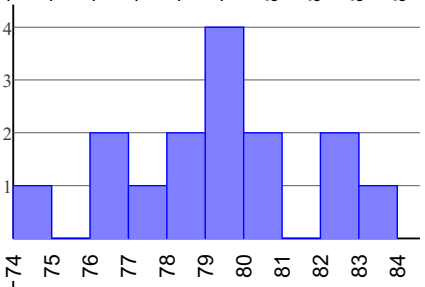
15) Life Expectancy

State	Years	State	Years
Nebraska	79.8	Oklahoma	78.2
Tennessee	77.9	Wisconsin	79.8
Kentucky	74.7	Alabama	78.1
Connecticut	82.7	Texas	80.3
New York	82.5	Rhode Island	79.7
Delaware	77	Georgia	80.1
Kansas	78.6	Iowa	79.8
Missouri	75.9		

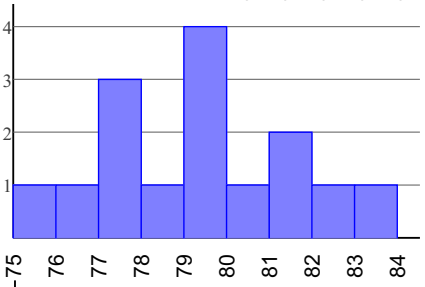
A)



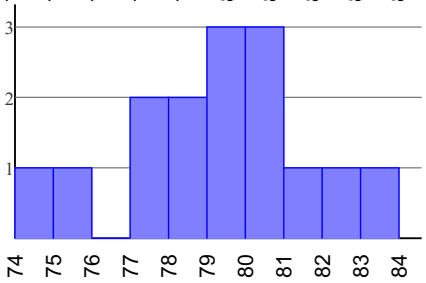
B)



C)



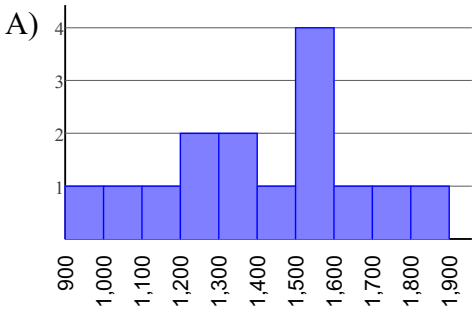
D)



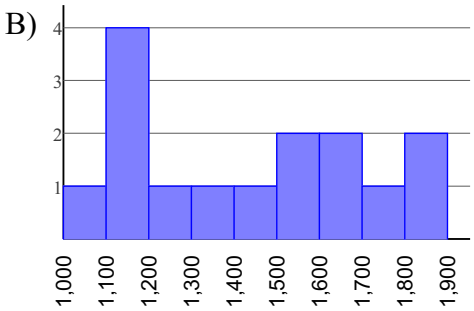
16) Car Weights (kg)

1,270	1,570	1,560	1,220	1,710
1,500	1,520	1,760	1,040	1,510
1,420	1,705	935	1,485	1,170

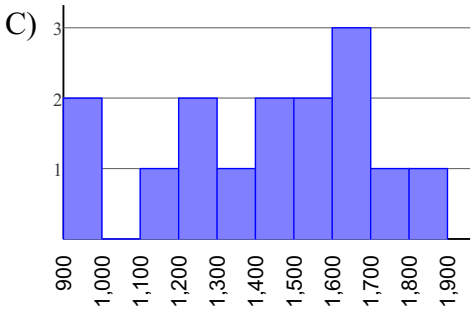
A)



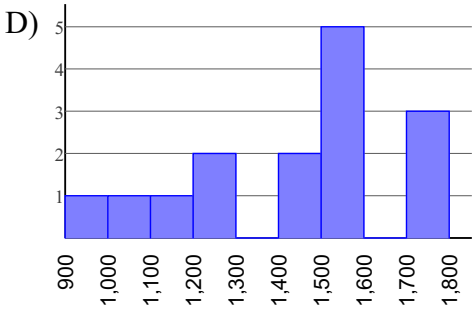
B)



C)



D)



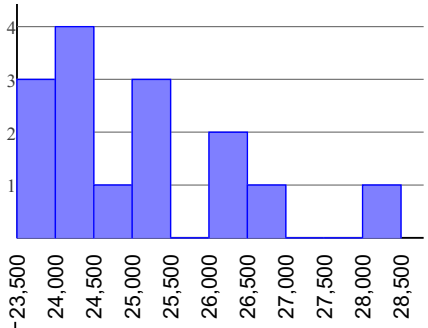
17) Mountain Heights

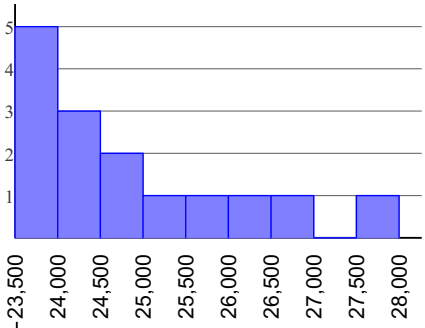
Name	Feet
Gangkhar Puensum	24,836
Saser Kangri III	24,590
Karjiang	23,691
Shispare	24,970

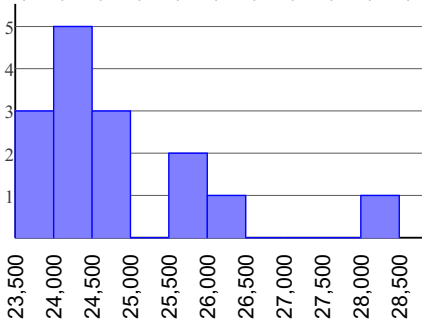
Name	Feet
Rakaposhi	25,551
Nanda Devi	25,643
Jomolhari	24,035
Rimo I	24,229

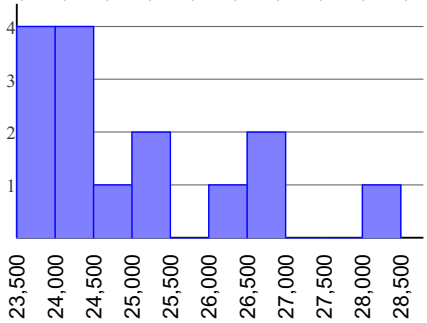
Name	Feet
Mana	23,858
Chongtar	23,999
K2	28,251
Churen Himal	24,229

Name	Feet
Jengish Chokusu	24,406
Gasherbrum II	26,362
Ghent Kangri	24,281

A) 

B) 

C) 

D) 

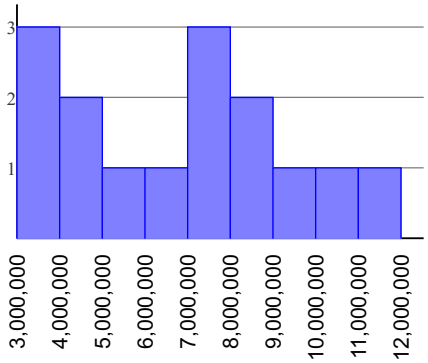
18) Large Cities

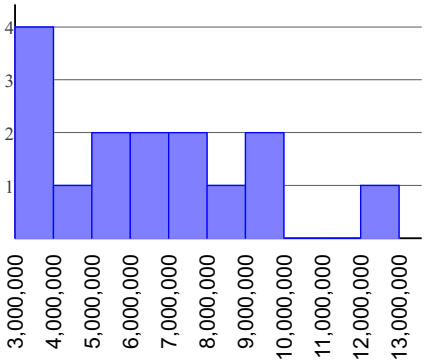
City	Population
Shenzhen	10,467,400
Shenyang	3,717,098
Riyadh	5,676,621
Yangon	4,714,000

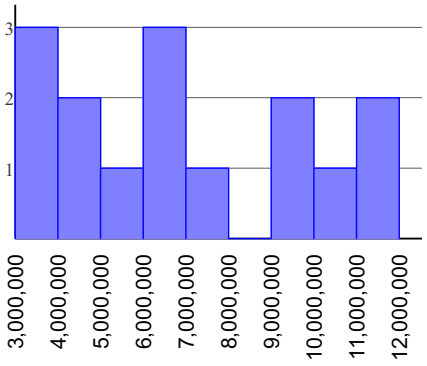
City	Population
Berlin	3,517,424
Faisalabad	3,547,446
Ho Chi Minh City	7,681,700
Yokohama	3,680,267

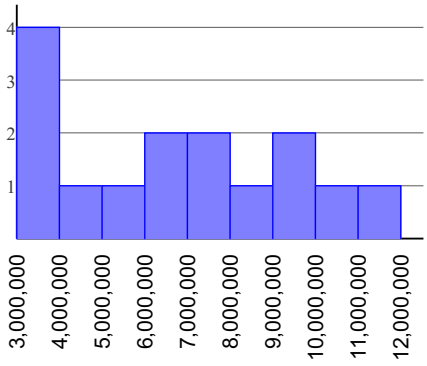
City	Population
Hanoi	6,844,100
Tianjin	9,341,844
Rio de Janeiro	6,429,923
Bogotá	7,776,845

City	Population
Kinshasa	9,735,000
Guangzhou	11,185,600
Bengaluru	8,425,970

A) 

B) 

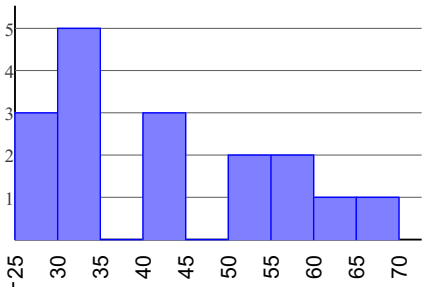
C) 

D) 

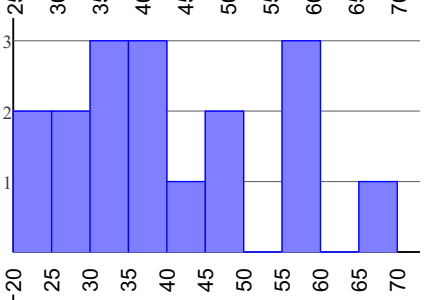
19) Annual Precipitation (Inches)

53.4	64.8	34.8	42	36.2
35	27.6	27.4	21.8	32.6
39	57.4	28.4	32.6	67.4
48	56.8			

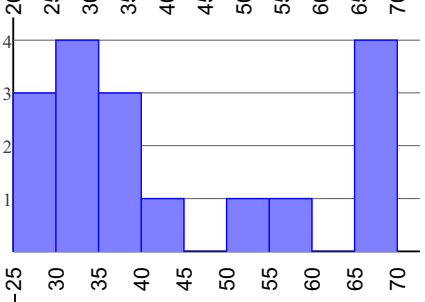
A)



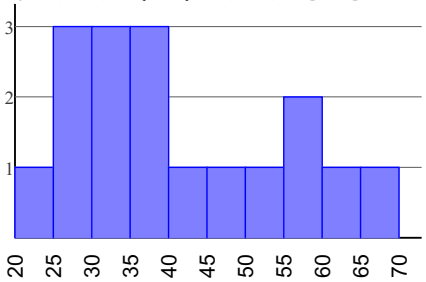
B)



C)



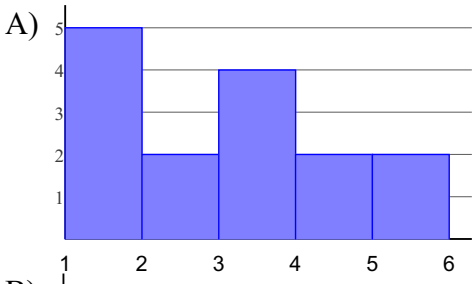
D)



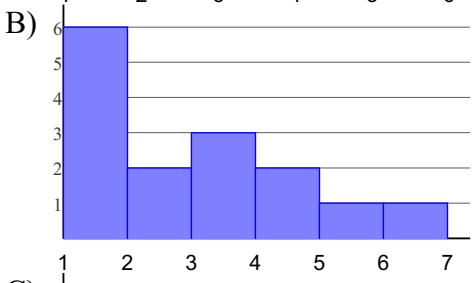
20) # Words in Book Titles

1	2	2	5	4	4	1	4
1	2	3	3	3	5	1	

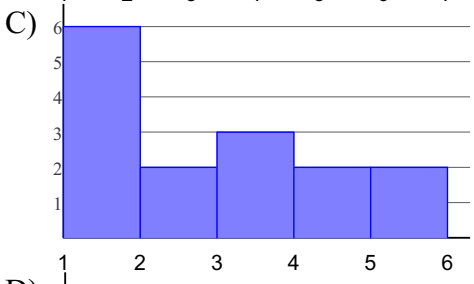
A)



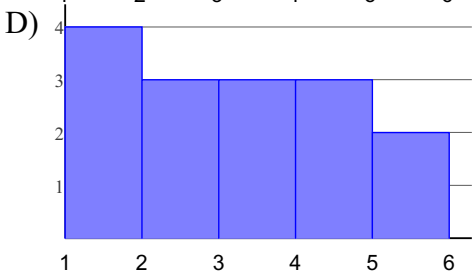
B)



C)



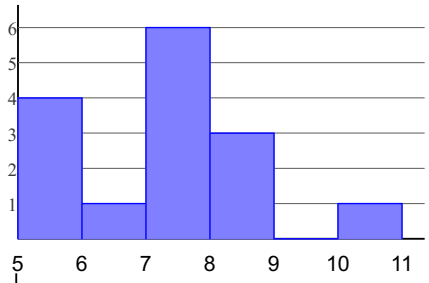
D)



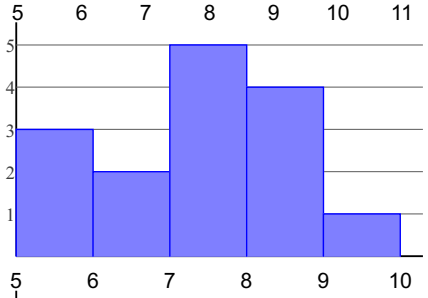
21) Hours Slept

6.75	8.5	8.5	8.25	7.5	7.75
6.75	8.5	8	5.25	9	6.75
5	7.75	6.5			

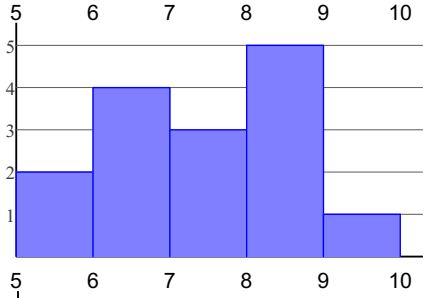
A)



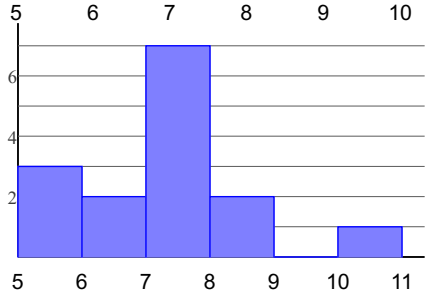
B)



C)



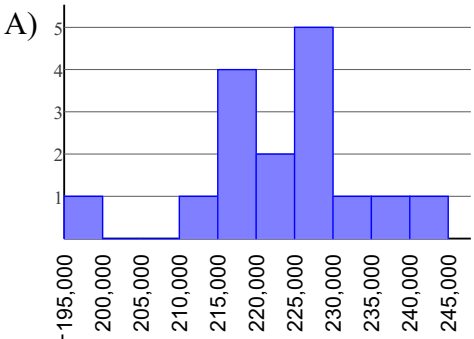
D)



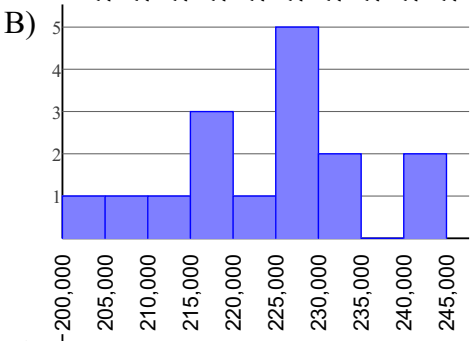
22) Single Family Home Prices

219,100	211,700	226,100	229,700
195,600	243,200	219,900	219,900
218,500	232,000	225,500	226,800
226,000	235,800	222,600	223,700

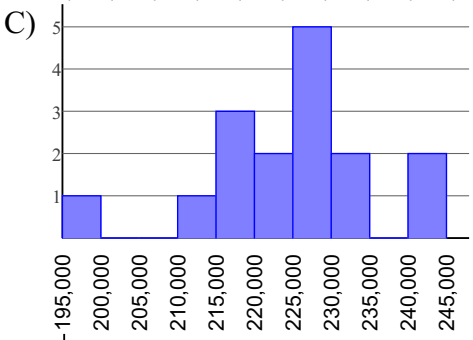
A)



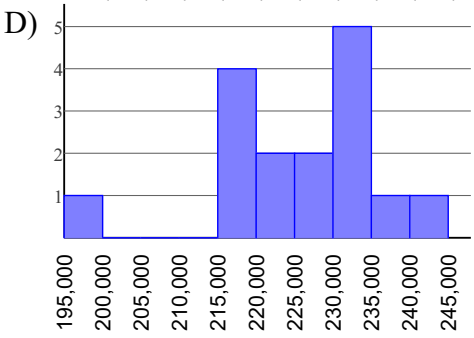
B)



C)



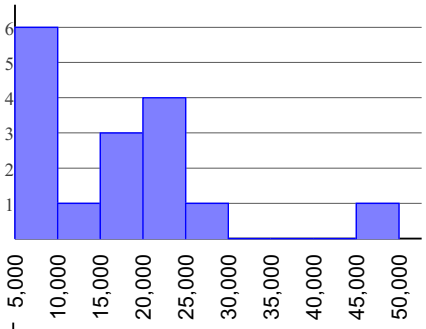
D)



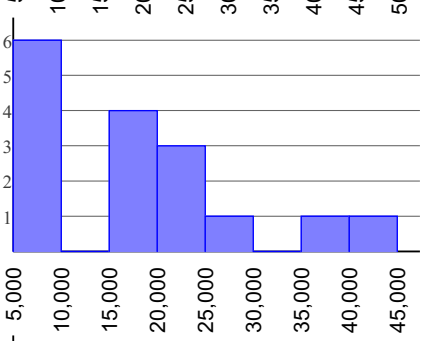
23) Annual Household Income

24,700	43,100	25,850	8,150
18,400	19,150	9,900	22,600
24,800	8,450	7,650	15,250
17,150	9,550	24,800	15,500

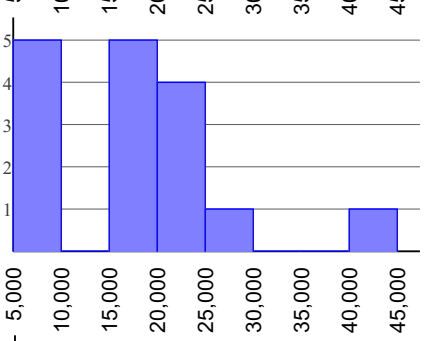
A)



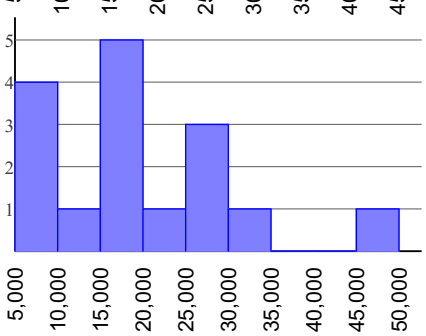
B)



C)



D)

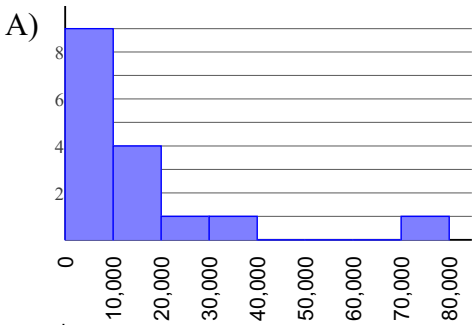


24) Per Capita Income

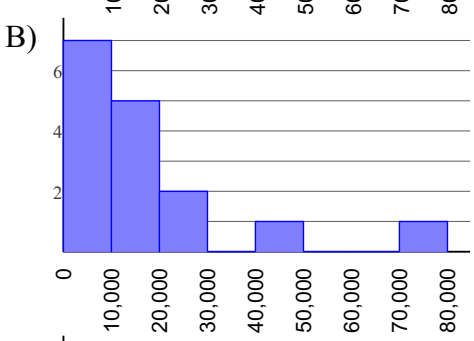
Country	US $
Brazil	15,034
Finland	38,251
Chad	2,081
Croatia	20,904
Thailand	14,390
Mongolia	9,433
Grenada	11,498
Bangladesh	2,557

Country	US $
Uzbekistan	5,167
Singapore	78,744
Cape Verde	6,412
Togo	1,390
Rwanda	1,452
Mauritania	3,042
Ecuador	10,469
Bhutan	7,669

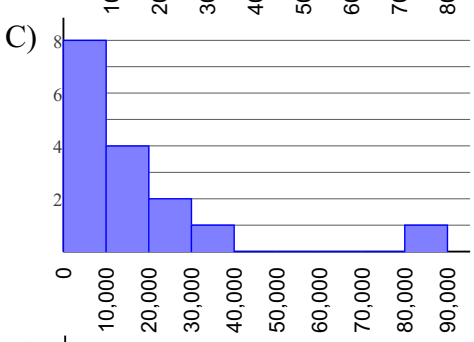
A)



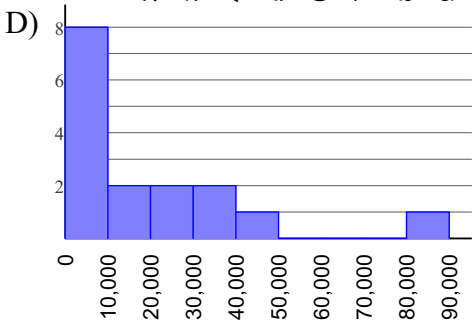
B)



C)



D)



Find the mode, median, lower quartile, and upper quartile for each data set.

25) Minutes to Run 5km

32.9	36.3	33	26	34.4
29	33	47.5	36.6	33.1
39.1	38.9	27.7	26.9	42.6
36.3	27			

A) Mode = 26.1, Median = 32.4, Q_1 = 27.15 and Q_3 = 40.05

B) Mode = 33 and 36.3, Median = 33.1, Q_1 = 28.35 and Q_3 = 37.75

C) Mode = 32.7, Median = 32.7, Q_1 = 30.95 and Q_3 = 37.15

D) Mode = 29.2 and 31, Median = 30.3, Q_1 = 28.3 and Q_3 = 31.4

26) Mens Heights (Inches)

77	69	64	71	64	73	79
66	69	72	74	65	69	70
73						

A) Mode = 71, Median = 71, Q_1 = 65 and Q_3 = 76

B) Mode = 65, Median = 71, Q_1 = 65 and Q_3 = 74

C) Mode = 69, Median = 70, Q_1 = 66 and Q_3 = 73

D) Mode = 69, Median = 70, Q_1 = 69 and Q_3 = 72

27) Age Assumed Office

Senator	Age	Senator	Age
Tom Udall	60	Joe Manchin	63
Bob Casey, Jr.	46	Richard Burr	49
Jim Inhofe	60	Jack Reed	47
Ed Markey	67	Mike Lee	39
Johnny Isakson	60	John Barrasso	54
Barbara Mikulski	50	Patrick Leahy	34
Roger Wicker	56	Brian Schatz	40
Chris Coons	47	Dan Coats	67

A) Mode = 47, Median = 51.5, Q_1 = 47 and Q_3 = 56.5

B) Mode = 54, Median = 53.5, Q_1 = 48.5 and Q_3 = 56.5

C) Mode = 55, Median = 52, Q_1 = 46 and Q_3 = 55

D) Mode = 60, Median = 52, Q_1 = 46.5 and Q_3 = 60

28) Age at First Job

15	12	21	21	12	17	19
17	12	15	12	12	12	16
18	16	17				

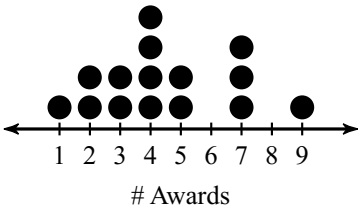
A) Mode = 17, Median = 17, Q_1 = 14.5 and Q_3 = 18

B) Mode = 12, Median = 16, Q_1 = 12 and Q_3 = 17.5

C) Mode = 15 and 18, Median = 18, Q_1 = 15.5 and Q_3 = 19.5

D) Mode = 16, Median = 16, Q_1 = 14.5 and Q_3 = 17.5

29) Academy Awards Won by Movie



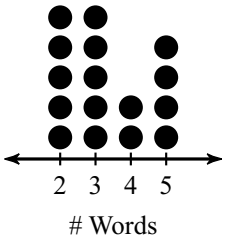
A) Mode = 4 and 5, Median = 4, $Q_1 = 3$ and $Q_3 = 5$

B) Mode = 4 and 5, Median = 5, $Q_1 = 4$ and $Q_3 = 6$

C) Mode = 4, Median = 4, $Q_1 = 3$ and $Q_3 = 5$

D) Mode = 4, Median = 4, $Q_1 = 3$ and $Q_3 = 7$

30) Length of Book Titles



A) Mode = 2, Median = 2, $Q_1 = 2$ and $Q_3 = 3$

B) Mode = 2 and 3, Median = 3, $Q_1 = 2$ and $Q_3 = 4$

C) Mode = 2 and 3, Median = 3, $Q_1 = 2$ and $Q_3 = 4.5$

D) Mode = 2, Median = 2, $Q_1 = 2$ and $Q_3 = 3.5$

31) Shoe Size

5.5	4.5	5.5	9	8	8	8
7	7	6	7.5	9	9.5	8
6	8					

A) Mode = 8, Median = 7.75, $Q_1 = 6$ and $Q_3 = 8$

B) Mode = 7, Median = 8.5, $Q_1 = 7.25$ and $Q_3 = 9.5$

C) Mode = 7.5, Median = 8.25, $Q_1 = 7.5$ and $Q_3 = 9$

D) Mode = 8 and 10, Median = 8.25, $Q_1 = 7$ and $Q_3 = 9.5$

32) Games per World Series

6	6	7	5	4	7	7	7
5	7	4	7	4	7	4	

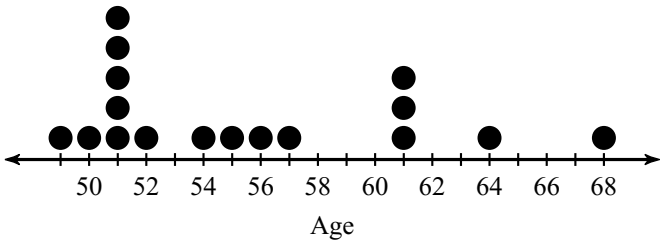
A) Mode = 6, Median = 6, $Q_1 = 5$ and $Q_3 = 7$

B) Mode = 7, Median = 6, $Q_1 = 5$ and $Q_3 = 7$

C) Mode = 5, Median = 5, $Q_1 = 5$ and $Q_3 = 7$

D) Mode = 7, Median = 6, $Q_1 = 4$ and $Q_3 = 7$

33) Age of Presidents at Inauguration



A) Mode = 55, Median = 55, $Q_1 = 49.5$ and $Q_3 = 61$

B) Mode = 51, Median = 54, $Q_1 = 51$ and $Q_3 = 61$

C) Mode = 51 and 54, Median = 54, $Q_1 = 51$ and $Q_3 = 59.5$

D) Mode = 54, Median = 54, $Q_1 = 50.5$ and $Q_3 = 57$

34) Basketball Tournament

School	Appearances
Belmont	7
Central Connecticut State	3
Evansville	5
Air Force	4
Maryland	24

School	Appearances
Cleveland State	2
North Dakota State	3
Harvard	5
South Alabama	8
Portland	2

School	Appearances
Albany	5
Northeastern	8
Stephen F. Austin	3
Tulsa	15
DePaul	18

A) Mode = 1, Median = 5, Q_1 = 1 and Q_3 = 25

B) Mode = 3 and 5, Median = 5, Q_1 = 3 and Q_3 = 8

C) Mode = 4, Median = 5, Q_1 = 4 and Q_3 = 13

D) Mode = 4, Median = 4, Q_1 = 3 and Q_3 = 18

Find the mean and sample standard deviation for each data set.

35) Test Scores

52 46 48 46 52 48 52
40 49 33 52

A) Mean = 49.09 and s = 6.09

B) Mean = 47.09 and s = 5.94

C) Mean = 49.55 and s = 6.62

D) Mean = 49.18 and s = 5.36

36) Hours Slept

5.5 4.5 7.25 5.5 6.25 7
7.75 5 6 6.25

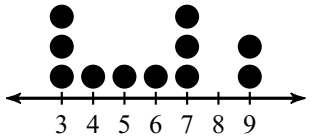
A) Mean = 6.1 and s = 1.02

B) Mean = 7.13 and s = 0.78

C) Mean = 6.55 and s = 0.39

D) Mean = 7.08 and s = 1.25

37) Goals in a Hockey Game



A) Mean = 4.64 and s = 2.58

B) Mean = 5.36 and s = 2.5

C) Mean = 5.73 and s = 2.28

D) Mean = 5.73 and s = 2.41

38) Annual Household Income

8,350 9,950 32,250 16,850
20,200 7,300 13,650 14,800
20,250

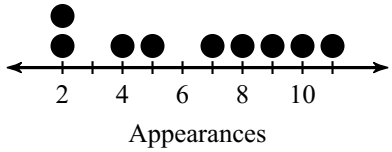
A) Mean = 21,938.89 and s = 10,435.87

B) Mean = 15,955.56 and s = 7,731.81

C) Mean = 20,922.22 and s = 10,970.7

D) Mean = 21,966.67 and s = 12,450.35

39) Appearances in Basketball Tournament



A) Mean = 19.67 and s = 12.4

B) Mean = 6.44 and s = 3.36

C) Mean = 20.22 and s = 11.12

D) Mean = 3.22 and s = 4.6

40) Games per World Series

7 7 7 4 5 7 6 5
6

A) Mean = 6 and s = 1.12

B) Mean = 6.11 and s = 1.05

C) Mean = 5.22 and s = 1.09

D) Mean = 5.22 and s = 1.39

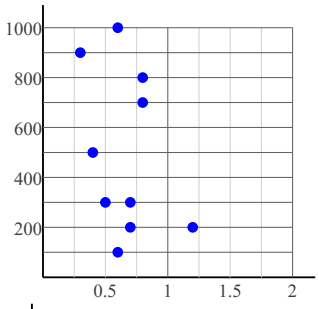
Construct a scatter plot. State if there appears to be a positive correlation, negative correlation, or no correlation. When there is a correlation, identify the relationship as linear, quadratic, or exponential.

41)

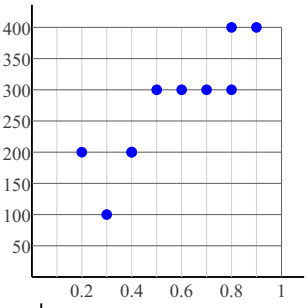
X	Y
0.2	200
0.3	100
0.4	200
0.4	200

X	Y
0.5	300
0.6	300
0.7	300

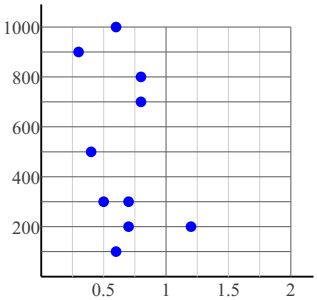
X	Y
0.8	300
0.8	400
0.9	400

A) 

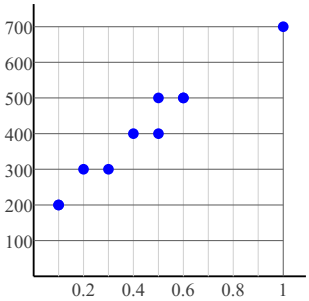
No correlation

B) 

Positive correlation
Linear

C) 

Positive correlation
Linear

D) 

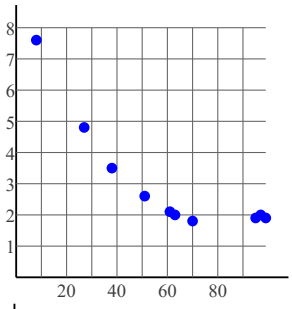
Positive correlation
Linear

42)

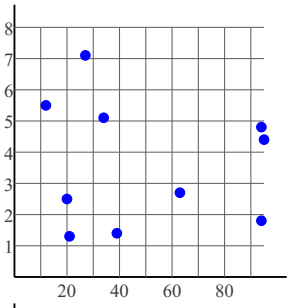
X	Y
14	4.4
22	2.6
28	0.3
38	7.8

X	Y
39	5.6
55	5.6
63	2.9

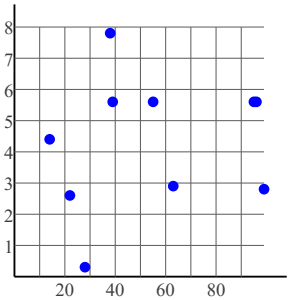
X	Y
95	5.6
96	5.6
99	2.8

A) 

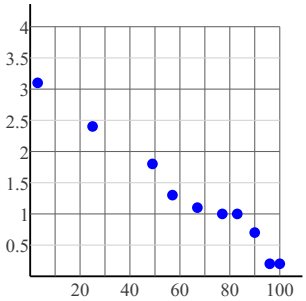
Negative correlation
Quadratic

B) 

No correlation

C) 

No correlation

D) 

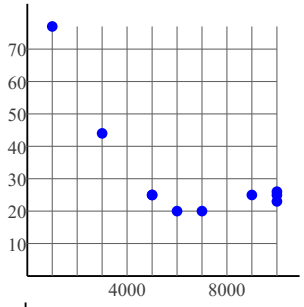
Negative correlation
Linear

43)

X	Y
1,000	77
3,000	44
5,000	25
5,000	25
6,000	20

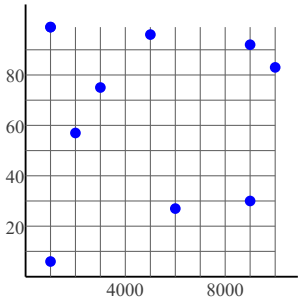
X	Y
7,000	20
9,000	25
10,000	23
10,000	25
10,000	26

A)



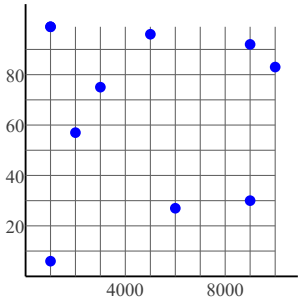
Negative correlation
Quadratic

B)



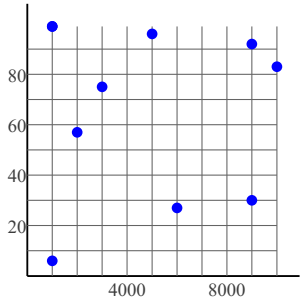
Negative correlation
Exponential

C)



Positive correlation
Quadratic

D)



No correlation

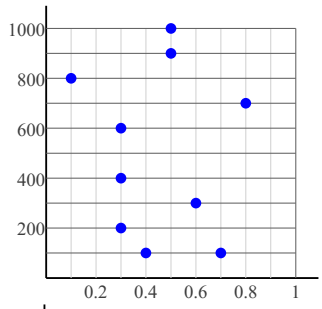
44)

X	Y
0.1	100
0.1	200
0.3	500
0.4	600

X	Y
0.5	700
0.6	700
0.6	800

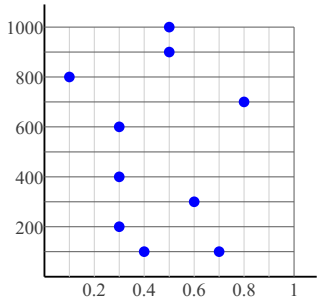
X	Y
0.7	800
1	800
1	800

A)



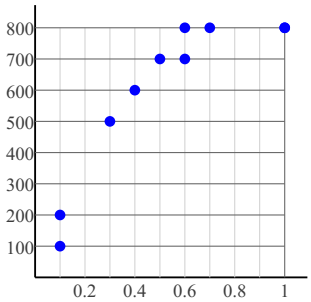
Positive correlation
Linear

B)



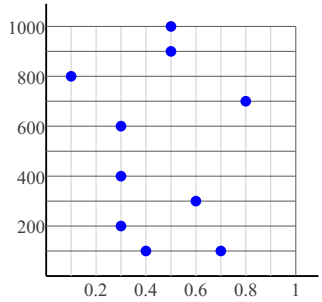
No correlation

C)



Positive correlation
Quadratic

D)



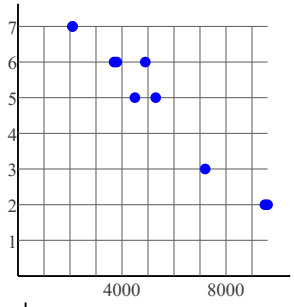
Positive correlation
Exponential

45)

X	Y
2,100	7
2,100	7
3,700	6
3,800	6
4,500	5

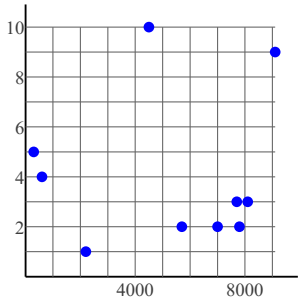
X	Y
4,900	6
5,300	5
7,200	3
9,500	2
9,600	2

A)



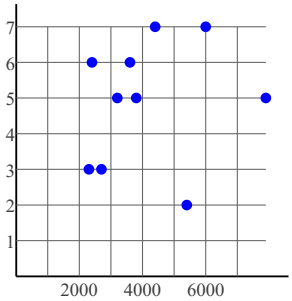
Negative correlation
Linear

B)



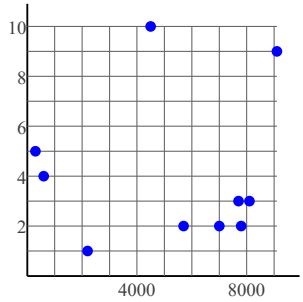
Negative correlation
Linear

C)



No correlation

D)



No correlation

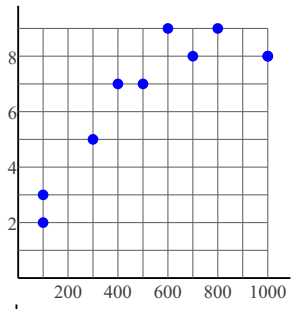
46)

X	Y
100	8
300	4
400	3
500	3

X	Y
700	1
700	1
900	1

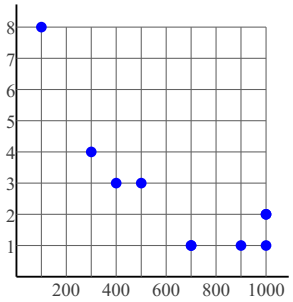
X	Y
1,000	1
1,000	2
1,000	2

A)



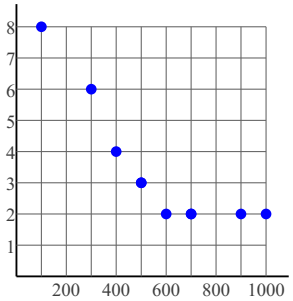
Positive correlation
Quadratic

B)



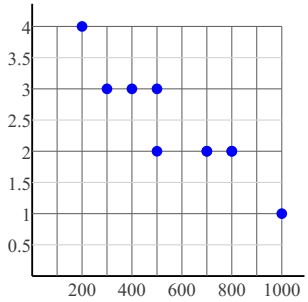
Negative correlation
Quadratic

C)



Negative correlation
Quadratic

D)



Negative correlation
Linear

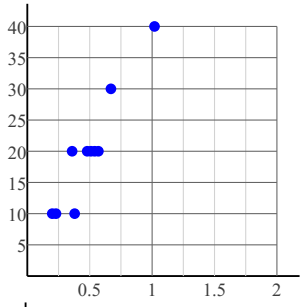
47)

X	Y
0.2	10
0.23	10
0.36	20
0.38	10

X	Y
0.48	20
0.51	20
0.54	20

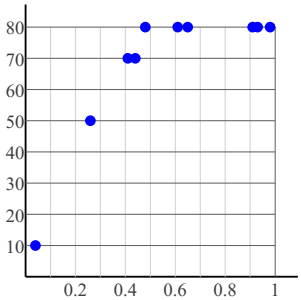
X	Y
0.57	20
0.67	30
1.02	40

A)



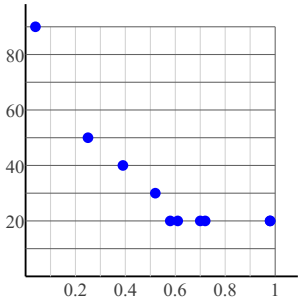
Positive correlation
Linear

B)



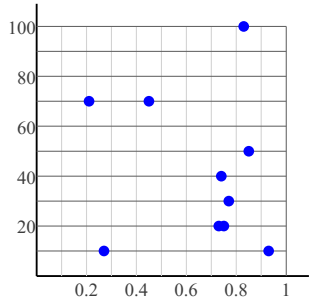
Positive correlation
Quadratic

C)



Negative correlation
Quadratic

D)



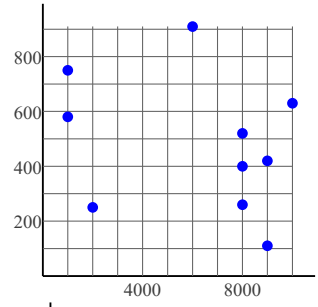
No correlation

48)

X	Y
1,000	30
3,000	30
3,000	80
3,000	100
5,000	130

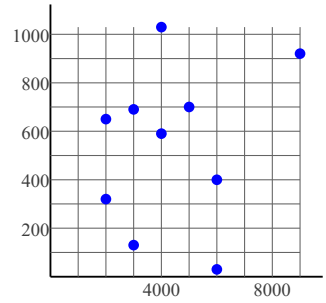
X	Y
5,000	130
5,000	160
6,000	160
6,000	180
8,000	230

A)



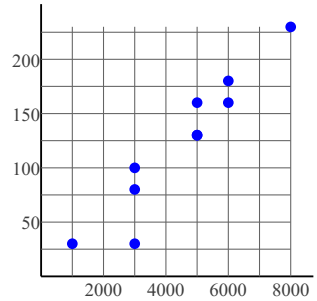
No correlation

B)



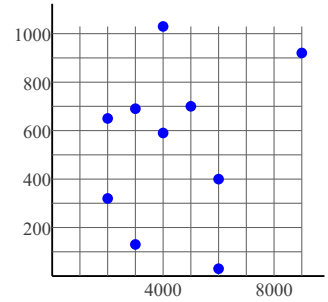
No correlation

C)



Positive correlation
Linear

D)



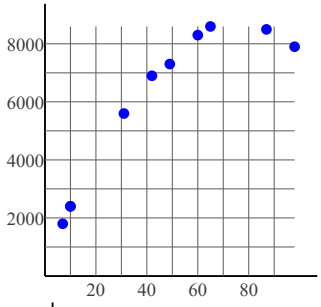
Positive correlation
Quadratic

49)

X	Y
5	2,200
25	5,000
42	6,800
46	7,200
59	7,900

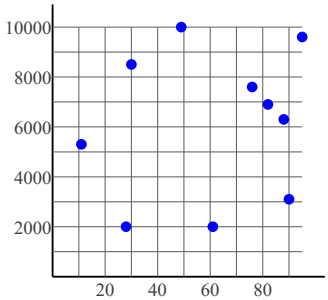
X	Y
82	8,500
96	8,500
97	8,100
97	8,400
98	8,200

A)



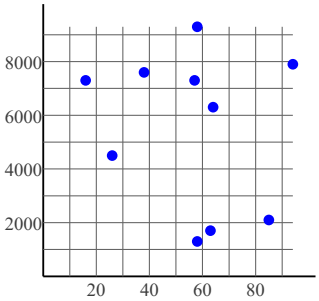
Positive correlation
Quadratic

B)



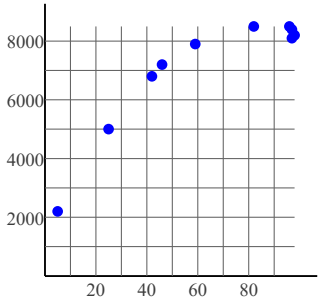
No correlation

C)



No correlation

D)



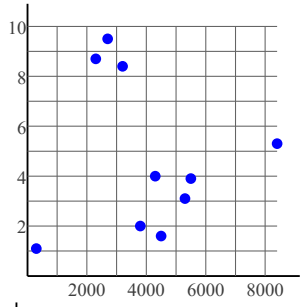
Positive correlation
Quadratic

50)

X	Y
300	1.1
2,300	8.7
2,700	9.5
3,200	8.4
3,800	2

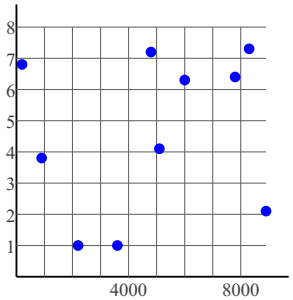
X	Y
4,300	4
4,500	1.6
5,300	3.1
5,500	3.9
8,400	5.3

A)



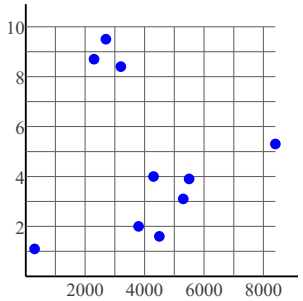
Negative correlation
Linear

B)



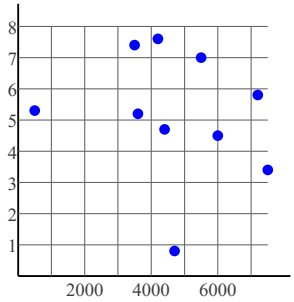
No correlation

C)



No correlation

D)



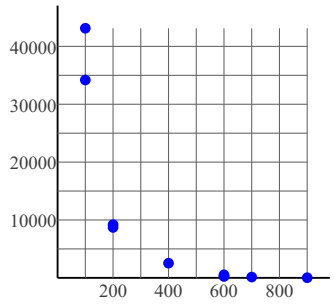
No correlation

Find the slope-intercept form of the equation of the line that best fits the data.

51)

X	Y
100	34,200
100	43,150
200	8,700
200	9,180
400	2,520

X	Y
600	260
600	270
600	510
700	130
900	10



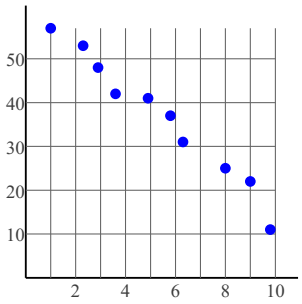
A) $y = -0.028263x + 37.98$
B) $y = -43.304x + 28947$
C) $y = 0.064706x + 25.294$
D) $y = 0.057143x + 17.143$

52)

X	Y
1	57
2.3	53
2.9	48
3.6	42

X	Y
4.9	41
5.8	37
6.3	31

X	Y
8	25
9	22
9.8	11



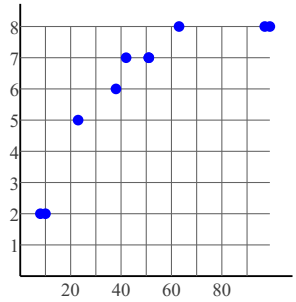
A) $y = -5.9422x + 65.087$
B) $y = -34225x + 262080$
C) $y = -4.8413x + 62.649$
D) $y = -2499.1x + 17416$

53)

X	Y
8	2
10	2
23	5
38	6

X	Y
42	7
51	7
51	7

X	Y
63	8
97	8
99	8



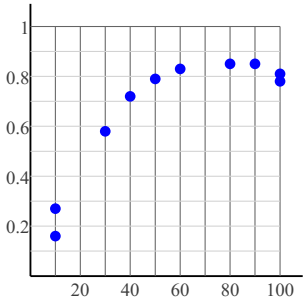
A) $y = 0.062655x + 2.98$
B) $y = -0.046402x + 6.0774$
C) $y = 500.41x - 17502$
D) $y = -0.049958x + 5.7882$

54)

X	Y
10	0.16
10	0.27
30	0.58
40	0.72

X	Y
50	0.79
60	0.83
80	0.85

X	Y
90	0.85
100	0.78
100	0.81

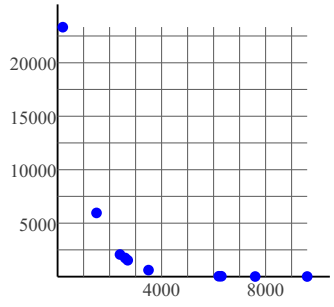


A) $y = 0.00635x + 0.303$
B) $y = 0.00717x + 0.19301$
C) $y = 0.0059963x + 0.32221$
D) $y = -0.0075607x + 0.92715$

55)

X	Y
200	23,343.4
1,500	5,956.1
2,400	2,057.7
2,600	1,733.5
2,700	1,526.4

X	Y
3,500	607.6
6,200	30.8
6,300	28.5
7,600	6.9
9,600	0.7



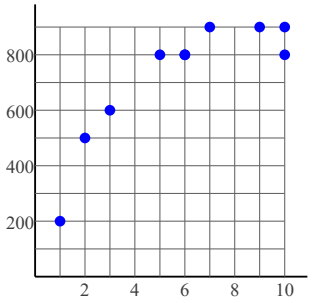
A) $y = -0.00020562x + 6.1451$
B) $y = -0.0007022x + 6.9378$
C) $y = 0.00066435x + 2.8949$
D) $y = -1.4905x + 9878.6$

56)

X	Y
1	200
2	500
3	600
5	800

X	Y
6	800
6	800
7	900

X	Y
9	900
10	800
10	900

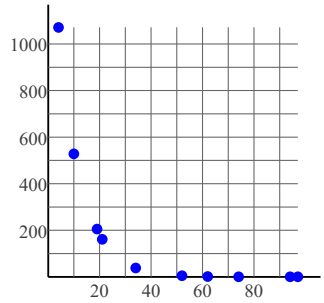


A) $y = -57.617x + 672.66$
B) $y = -43.017x + 509.5$
C) $y = 59.419x + 369.43$
D) $y = -63.801x + 654.52$

57)

X	Y
4	1,071.9
10	528.4
19	205.3
21	161.1
34	38

X	Y
52	5
62	1.7
74	0.4
94	0.1
97	0.01

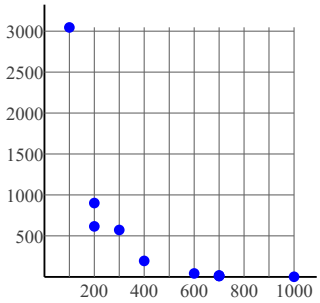


A) $y = -17.562x + 1127.2$
B) $y = 0.0052112x + 0.20006$
C) $y = -7.158x + 535.47$
D) $y = 0.0089098x + 0.14826$

58)

X	Y
100	3,046.3
200	616.2
200	901
300	572
400	194.5

X	Y
600	40.9
700	9.9
700	10.1
700	17.8
1,000	1.2



A) $y = 0.0049215x + 1.1016$
B) $y = -2.2642x + 1650.5$
C) $y = -0.0051526x + 5.787$
D) $y = 1.7376x - 584.16$

Represent the sample space using set notation.

59) An ice cream stand offers three flavors: strawberry, chocolate, and vanilla.

A) {strawberry, chocolate, vanilla}
B) {strawberry, chocolate, mint}
C) {strawberry}

60) The band must decide when to meet for a practice. The possible times are 3, 4, or 5 p.m.

A) {time, 3, 4, 5} B) {time, 3}
C) {3, 4, 5}

61) A spinner can land on either red, blue, green, or yellow. You spin once.

A) {red, blue, green, yellow}
B) {blue, green, yellow}
C) {red, blue, yellow}

62) A room in a house needs to be painted. The room can be painted white, yellow, or pink.

A) {paint, color, white, yellow, pink}
B) {white, yellow, pink}
C) {paint, house, color, white, yellow, pink}

63) When a button is pressed, a computer program outputs a random even number greater than 0 and less than 8. You press the button twice.

A) {(2, 2), (4, 4), (6, 6)}
B) {(2, 2), (2, 4), (2, 6)}
C) {(2, 2), (2, 4), (2, 6),
(4, 2), (4, 4), (4, 6),
(6, 2), (6, 4), (6, 6)}

64) Two rooms in a house need to be painted. Each room can be painted either white or yellow.

A) {(W, W), (Y, W)}
B) {(W, W), (W, Y),
(Y, W), (Y, Y)}
C) {(W, W), (W, Y)}

65) There are two girls and a boy on a trivia team. Two questions remain. One team member is randomly picked to answer the first question and a different member is picked to answer the second question.

A) {(G_1, G_2), (G_1, B),
(G_2, G_1), (G_2, B),
(B, G_1), (B, G_2)}
B) {(G_1, G_1), (G_2, G_1), (B, G_1)}
C) {(G_1, G_1), (G_1, G_2), (G_1, B),
(G_2, G_1), (G_2, G_2), (G_2, B),
(B, G_1), (B, G_2), (B, B)}

66) A bagel shop has three types of bagels: plain, onion, and raisin. Each bagel can be ordered with no spread, with butter, or with cream cheese.

A) {(P, N), (P, B), (P, C),
(O, N), (O, B), (O, C),
(R, N), (R, B), (R, C)}
B) {(P, N), (O, N), (R, N)}
C) {(P, P), (P, O), (P, R),
(O, P), (O, O), (O, R),
(R, P), (R, O), (R, R)}

67) The band must decide when to meet for a practice. The possible days are Tuesday or Wednesday. The possible times are 3, 4, or 5 p.m.

A) {(T, 3), (T, 4), (T, 5)}
B) {(T, 3), (T, 4), (T, 5),
(W, 3), (W, 4), (W, 5)}
C) {(T, 3), (W, 3)}

68) A soccer player takes two penalty kicks in a game. Each attempt results in a goal or a miss.

A) {(G, G), (M, M)}
B) {(G, G), (G, M),
(M, G), (M, M)}
C) {(G, G), (G, M)}

Find the number of possible outcomes in the sample space.

69) A bag contains three real diamonds and two fake diamonds. You randomly pick a diamond.

A) 9 B) 2 C) 5

70) When a button is pressed, a computer program outputs a random even number greater than 0 and less than 10. You press the button once.

A) 4 B) 6 C) 9

71) A basket contains one apple, one peach, and one orange. You randomly pick a piece of fruit.

A) 6 B) 3 C) 2

72) A jewelry store sells rings with either a ruby, sapphire, emerald, or diamond gemstone.

A) 0 B) 5 C) 4

73) A coffee shop offers French roast, Italian roast, and American roast coffee.

A) 7 B) 3 C) 1

74) A coffee shop offers small, medium, and large sizes. Customers can choose between French roast and Italian roast.

A) 9 B) 6 C) 8

75) A softball player bats twice in a game. Each at-bat results in an out, getting on base, or hitting a home run.

A) 5 B) 4 C) 9

76) A spinner can land on either red or blue. You flip a coin and then spin the spinner.

A) 8 B) 4 C) 5

77) A jewelry store sells gold and platinum rings. Each ring is fitted with a ruby, sapphire, or emerald gemstone.

A) 6 B) 9 C) 7

78) A spinner can land on either red or blue. You spin and then roll a six-sided die.

A) 15 B) 12 C) 17

Determine whether the scenario involves independent or dependent events.

79) There are eight shirts in your closet, four blue and four green. You randomly select one to wear on Monday and then a different one on Tuesday. You wear a blue shirt on Monday and a green shirt on Tuesday.

A) Independent B) Dependent

80) There are six nickels and six dimes in your pocket. You randomly pick a coin out of your pocket and place it on a counter. Then you randomly pick another coin. Both coins are nickels.

A) Dependent B) Independent

81) A cooler contains fourteen bottles of sports drink: eight lemon-lime flavored and six orange flavored. You randomly grab a bottle and give it to your friend. Then, you randomly grab a bottle for yourself. You and your friend both get lemon-lime.

A) Dependent B) Independent

82) You flip a coin and then roll a fair six-sided die. The coin lands tails-up and the die shows an odd number.

A) Dependent B) Independent

83) A spinner has an equal chance of landing on each of its four numbered regions. You spin twice. The first spin lands in region four and the second spin lands in region three.

A) Independent B) Dependent

84) A basket contains four apples and six peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. Both pieces of fruit are apples.

A) Dependent B) Independent

Find the probability.

85) You select a card from a standard shuffled deck of 52 cards. You return the card, shuffle, and then select another card. Both times the card is a diamond. (Note that 13 of the 52 cards are diamonds.)

A) $\frac{1}{17} \approx 0.059$ B) $\frac{8}{33} \approx 0.242$

C) $\frac{1}{16} \approx 0.063$

86) A basket contains seven apples and five peaches. You randomly select a piece of fruit and then return it to the basket. Then you randomly select another piece of fruit. Both pieces of fruit are apples.

A) $\frac{49}{144} \approx 0.34$ B) $\frac{1}{12} \approx 0.083$

C) $\frac{1}{16} \approx 0.063$

87) A bag contains seven red marbles and five blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. Both the first and second marbles are red.

A) $\frac{1}{17} \approx 0.059$ B) $\frac{49}{144} \approx 0.34$

C) $\frac{3}{11} \approx 0.273$

88) A cooler contains twelve bottles of sports drink: five lemon-lime flavored, four orange flavored, and three fruit-punch flavored. You randomly grab a bottle. Then you return the bottle to the cooler, mix up the bottles, and randomly select another bottle. The first time, you get a lemon-lime drink. The second time, you get a fruit-punch.

A) $\frac{5}{48} \approx 0.104$ B) $\frac{3}{14} \approx 0.214$

C) $\frac{7}{26} \approx 0.269$

89) You flip a coin and then roll a fair six-sided die. The coin lands heads-up and the die shows an even number.

A) $\frac{1}{12} \approx 0.083$ B) $\frac{1}{4} = 0.25$

C) $\frac{25}{196} \approx 0.128$

90) A bag contains four red marbles and four blue marbles. You randomly pick a marble and then return it to the bag before picking another marble. Both the first and second marbles are red.

A) $\frac{1}{4} = 0.25$ B) $\frac{20}{169} \approx 0.118$

C) $\frac{7}{26} \approx 0.269$

Determine if events *A* and *B* are independent.

91) $P(A) = \frac{7}{10}$ $P(B) = \frac{7}{10}$ $P(A \text{ and } B) = \frac{14}{25}$

A) Dependent B) Independent

92) $P(A) = \frac{2}{5}$ $P(B) = \frac{1}{4}$ $P(A \text{ and } B) = \frac{2}{25}$

A) Independent B) Dependent

93) $P(A) = \frac{13}{20}$ $P(B) = \frac{1}{5}$ $P(A \text{ and } B) = \frac{13}{200}$

A) Dependent B) Independent

94) $P(A) = \frac{7}{20}$ $P(B) = \frac{1}{2}$ $P(A \text{ and } B) = \frac{7}{40}$

A) Independent B) Dependent

95) $P(A) = \frac{1}{2}$ $P(B) = \frac{1}{2}$ $P(A \text{ and } B) = \frac{9}{40}$

A) Independent B) Dependent

96) $P(A) = \frac{7}{20}$ $P(B) = \frac{2}{5}$ $P(A \text{ and } B) = \frac{7}{50}$

A) Independent B) Dependent

97) $P(A) = \frac{2}{5}$ $P(B) = \frac{1}{2}$ $P(A \text{ and } B) = \frac{1}{5}$

A) Dependent B) Independent

98) $P(A) = \frac{11}{20}$ $P(B) = \frac{1}{2}$ $P(A \text{ and } B) = \frac{143}{400}$

A) Independent B) Dependent

99) $P(A) = \frac{9}{20}$ $P(B) = \frac{1}{2}$ $P(A \text{ and } B) = \frac{9}{40}$

A) Dependent B) Independent

100) $P(A) = \frac{3}{5}$ $P(B) = \frac{7}{20}$ $P(A \text{ and } B) = \frac{21}{100}$

A) Dependent B) Independent

