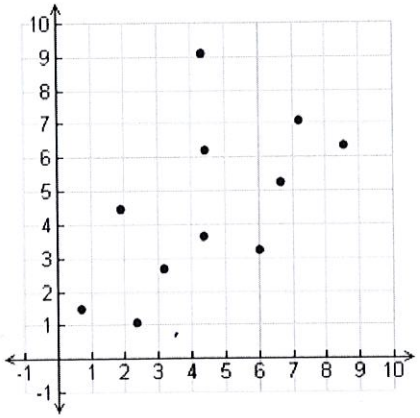
Integrated Math

Name: Key

Unit 4-Data Analysis Test Review WS

1. What type of correlation is shown in the scatter plot below?



a. There is a strong positive relationship between the variables
b. There is a strong negative relationship between the variables
c. There is a weak positive relationship between the variables
d. There is a weak negative relationship between the variables

2. John bought a cellular phone for $50 plus he pays a monthly fee to use it. The linear equation for this situation is $y = 25x + 50$. What does the 25 represent in this situation?

a. The number of minutes he's allowed per month
b. The amount he paid for his phone
c. The number of calls he's allowed per month
d. The amount of his monthly fee

3. What table best represents a linear model?

a.

x	y
1	5
2	8
3	10
4	11

b.

x	y
1	5
2	15
3	45
4	100

c.

x	y
4	2
6	3
8	4
11	5

d.

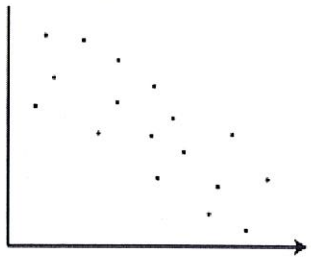
x	y
5	-3
6	-5
8	-9
12	-17

$r = -1$

4. In 2005, the value of a newly purchased car is $12,350. Two years later the value of the car decreased to $10,345. If the trend is linear, what is the yearly rate of change?

A) $1002.50 B) 2005 C) 0.0009 D) 2017

5. Which correlation coefficient would most accurately describe the data based on a linear model?



a. -0.75
b. -0.05
c. 0.55
d. 0.75

6. What does the slope of the table represent?

Hours	2	5	8
$ earned	32	48	64

$\frac{-16}{3} = \frac{16}{3} = \frac{\$}{hr}$

A. You earn $16 for every 3 hours worked.
B. You earn $3 for every 16 hours worked.
C. You earn $6 per hour.
D. You earn $16 per hour.

7. There were originally 10 bushes in Mitchell's nursery. Each year the Mitchells planted the same number of bushes. In the 18th year, there were 280 bushes. Which function b(n), can be used to determine the number of bushes in the nursery in any particular year?

a. b(n) = 15n + 10
b. b(n) = 18n - 10
c. b(n) = 280/18n + 10
d. b(n) = 18n + 10

8. The table below shows the cost of a pizza based on the number of toppings.

Number of Toppings (n)	**Cost (C)**
1	12
2	13.50
3	15
4	16.50

$y = 1.5x + 10.5$

Which function represents the cost of a pizza with n toppings?

a. C(n) = 12 + 1.5 (n - 1)
b. C(n) = 1.5n + 12
c. C(n) = 12n
d. C(n) = 12 + n

9. What is the difference in the y-intercepts of the following two functions?

x	**f(x)**	**x**	**g(x)**
-1	3	2	10
0	5	3	13
1	7	4	16
2	9	5	19

$f(x) = 2x+5$
$g(x) = 3x+4$

$5-4 = \boxed{1}$

10. A spring stretches linearly as weight is added. The table shows data collected for a certain spring.

Weight (g)	100	500	800	900	1200
Stretch (cm)	.5	2.5	4	4.5	6

$y = .005x + 0$

How much does the spring stretch for each gram of weight added?

a. 1/200
b. 1/100
c. 1/50
d. ½

11. A biologist is studying the relationship between a tree's diameter and its height. She records the following data for 7 different trees:

Diameter (in)	Height (ft)
2	8
3	10
4	16
5	17
6	22
7	20
8	29

What is the equation of the line of best fit?

A) $y = 3.18x + 1.54$ B) $y = 1.54x + 3.18$ C) $y = -3.18x + 1.54$ D) $y = -1.54x + 3.18$

12. The table shows the average height of a tree and the amount of years it has been growing.

Time (years)	1	2	3	4	5
Height (feet)	3	5	6	8	9

$\frac{3-9}{1-5} = \frac{-6}{-4} = 1.5$

What is the average rate of change in the height of the tree from Year 1 to Year 5?

a. 1 foot per year b. 1.25 feet per year c. 1.5 feet per year d. 2.0 feet per year

13. Over the weekend, Bill played ten games of bowling and recorded the following scores:

Game	1	2	3	4	5	6	7	8	9	10
Score	136	142	160	151	217	163	135	142	149	150

According to the line of best fit for the data, approximately what would Bill's score be if he were to play an 11th game?

$y = -.103x + 155.066$
153.9

a. 128 b. 154 c. 202 d. 220

14. The table below shows the costs for visits of different lengths by cleaning companies in a town. The length of a visit is represented by x and the cost of a visit is represented by y. Each cleaning company charges a flat fee for visiting the house or apartment and an hourly rate.

Length of a visit (in hours)	2	2	3	3.5	4	4.5	5.5
Cost of a Visit	72	76	91	103	105	113	135

Based on a linear model, what is the best approximation of the correlation coefficient? $R = .99$

15. The table below shows the pants size and age of 5 boys.

Pants Size (Toddler Sizes - T)	Age (years)
3	3
4	3
5	✓6
6	5
7	6

3
3.8
4.6
5.4
6.2

$y = .8x + .6$
$4/5$

Approximately what percent of the boys' ages is more than 1 year different from the age predicted by the line of best fit?

a. 20% b. 40% c. 60% d. 80%

16. Joey compared the y-intercept of the graph of the function $f(x) = 2x + 3$ to the y-intercept of the graph of the linear function that includes the points in the table below.

x	g(x)
3	20
6	35
9	50
12	65

$g(x) = 5x + 5$ 3-5 -2

What is the difference when the y-intercept of g(x) is subtracted from the y-intercept of f(x)?

a. -12 b. -2 c. 2 d. 12

17. A caterer charges a setup fee and amount per person to provide a buffet.

Number Served	Charge
30	350
50	550
70	750

$y = 10x + 50$

What is the caterer's setup fee?

a. 10 b. 50 c. 60 d. 350

18. What does the y-intercept represent in the following table?

Temperature	18	19	20	21	21	23	24	24	24	26	26
Chirps per minute	105	105	125	125	130	149	153	152	164	171	175

a. The maximum temperature.
b. The decrease in chirps per minute as the temperature changes.
c. The increase in chirps per minute as the temperature changes.
d. The number of chirps when the temperature is zero.

19. The table below shows the amount of time seven students studied for a test and their respective test scores.

Time Spent Studying (minutes)	25	0	10	30	60	75
Test Score	77	72	80	85	96	98

Which describes the relationship between the time a student spent studying and their test score?

$r = .96$

a. There is a strong positive relationship between the variables
b. There is a strong negative relationship between the variables
c. There is a weak positive relationship between the variables
d. There is a weak negative relationship between the variables

20. The table below shows the number of hours that Tammy worked during 5 days and the amount of tips she earned.

Hours Worked (x)	Tips Earned (y)
6	71
7	90
8	82
4	26
6	55

Observed = 90
Predicted = 77.27
12.73

$y = 15.59x - 31.86$

What is the difference between the observed and predicted value of working 7 hours?