Name Key Discrete Review Date

1 The matrix below shows the number of crews a construction company uses per building for three types of buildings.

	Houses	Apartments	Offices
Building Crews	9(11)	2(45)	6(23)
Electrical Crews	9(3)	2(8)	6(3)
Plumbing Crews	9(4)	2(6)	6(2)
Landscaping Crews	9(1)	2(5)	6(1)

The company is currently working on 9 houses, 2 apartment buildings, and 6 office buildings. Which statement is true?

138 99

(A) There are more building crews working on offices than on houses.

16 18

B There are more electrical crews working on apartments than on offices. X less

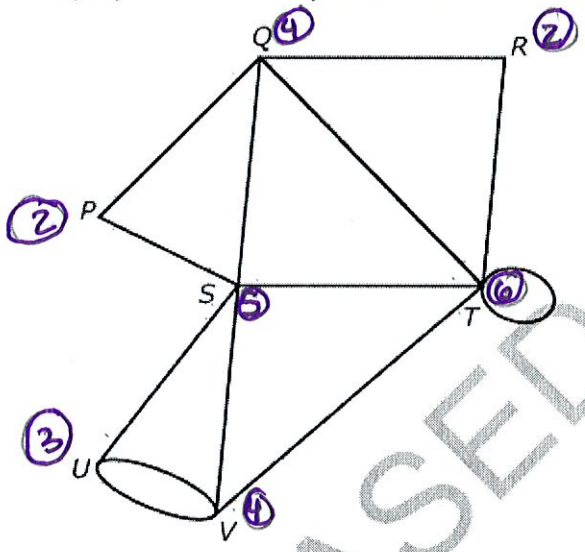
12 12

C There are more plumbing crews working on offices than on apartments. X same

9 10

D There are more landscaping crews working on houses than on apartments. less

2 The graph below displays a relationship between 7 locations.



Exactly 2 odd Valances Euler Path Exists

Can an Euler path be drawn for this graph?

A no, because there are exactly 2 vertices with an odd degree

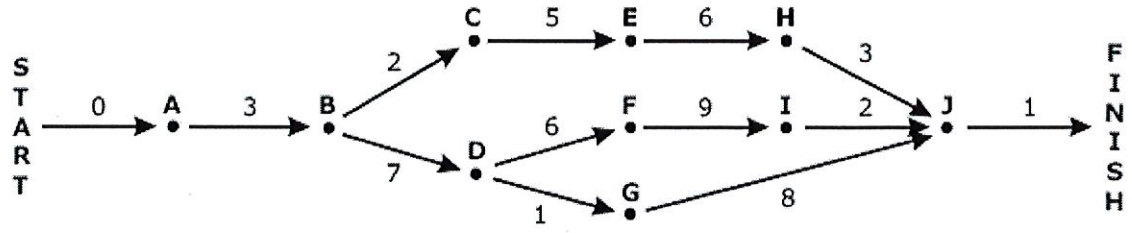
B no, because each vertex is of an even degree

(C) yes, because there are exactly 2 vertices with an odd degree

D yes, because each vertex is of an even degree

Name_____ Discrete Review Date_____

3 What is the critical path for the diagram below?



A START-A-B-C-E-H-J-FINISH 0+3+2+5+6+3+1 = 20

B START-A-B-C-E-J-FINISH Can't do

C START-A-B-D-F-I-J-FINISH 0+3+7+6+9+2+1 = 28

D START-A-B-D-G-J-FINISH 0+3+7+1+8+1 = 20

4 A student needs to complete the task list below for a project.

Task	Time	Prerequisites
Start	0 minutes	-
1	5 minutes	none
2	10 minutes	none
3	10 minutes	1
4	8 minutes	1, 3
5	4 minutes	2, 4
6	10 minutes	4
7	18 minutes	5, 6
8	7 minutes	7
Finish		

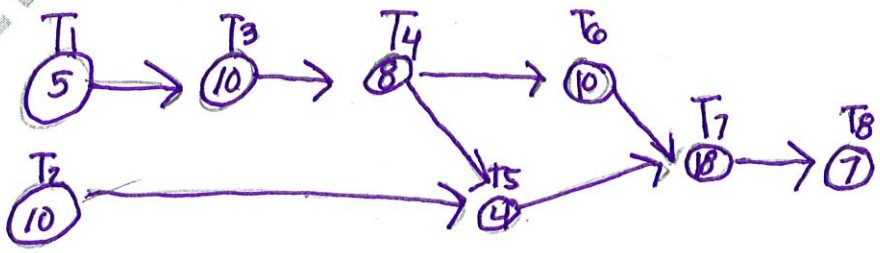
If multiple tasks can be done simultaneously, what is the minimum amount of time it will take the student to complete the task list?

A 47 minutes

B 52 minutes

C 58 minutes

D 72 minutes



5+10+8+10+18+7=58

5+10+8+4+18+7=52

10+4+18+7=39

5 Which group and purpose would work ***best*** in a census survey?

A the students in one class, to determine what students in the school think about school lunches

B the workers in an entire office building, to determine the most preferred day for weekly meetings

C the citizens of one county, to determine who is preferred nationally in an upcoming presidential election

D the citizens of an entire city, to determine what citizens think about tourism in their state

6 The amount of time Mr. Smith spends exercising each day is approximately normally distributed with a mean of 30 minutes and a standard deviation of 10 minutes. On ***approximately*** what percent of the days in a year does Mr. Smith exercise for between 10 minutes and 40 minutes?

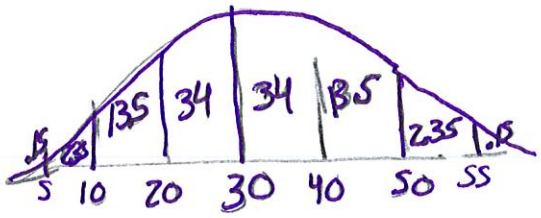
A 50%

B 82%

C 88%

D 95%

13.5+34+34=81.5%



7 A stem-and-leaf plot is shown below.

Stem	Leaves
1	3, 7
2	2, 2, 3, 3, 3, 6,7, 9
3	1, 2, 4, 8, 8
4	1
5	2

Which ***best*** describes the distribution of the data?

A skewed right

B skewed left

C symmetric

D bimodal

8 A spinner is divided into 12 sections that are each equally likely to occur. The sections are lettered from A to L. Philip will spin the spinner 3 times. What is the probability that the spinner will land on the letter G exactly 1 out of the 3 times?

A $\frac{121}{5,184}$

B $\frac{121}{1,728}$

C $\frac{121}{576}$

D $\frac{121}{288}$

$3C_1 \cdot \left(\frac{1}{12}\right)^1 \left(\frac{11}{12}\right)^2$

$3 \cdot \left(\frac{1}{12}\right)\left(\frac{121}{144}\right)$

$\frac{121}{576}$

9 A school is selecting new members for a council.

- There are 10 seniors competing for 6 spots.
- There are 8 juniors competing for 5 spots.
- There are 9 sophomores competing for 4 spots.
- There are 7 freshmen competing for 2 spots.

How many unique groupings of new members can the school make to fill the spots?

A 413

B 160,986

C 31,116,960

D 2,333,606,220

$_{10}C_6 \cdot {}_8C_5 \cdot {}_9C_4 \cdot {}_7C_2$

$210 \cdot 56 \cdot 126 \cdot 21$

$31,116,960$

10 A ballot contains a list of 5 candidates. Each voter can choose 0 to 5 candidates. In how many ways can a voter complete the ballot?

A 17

B 20

C 32

D 125

${}_5C_0 + {}_5C_1 + {}_5C_2 + {}_5C_3 + {}_5C_4 + {}_5C_5$

$1 + 5 + 10 + 10 + 5 + 1$

32

11 Suppose Caleb has an overall probability of $\frac{1}{10}$ of winning at a game of chance each time he plays. What is the ***approximate*** probability that Caleb will win the game at least once if he plays it 10 times?

A 0.61

B 0.65

C 0.90

D 0.96

Add all of them together

$_{10}C_1(\frac{1}{10})^1(\frac{9}{10})^9$ $_{10}C_6(\frac{1}{10})^6(\frac{9}{10})^4$

$_{10}C_2(\frac{1}{10})^2(\frac{9}{10})^8$ $_{10}C_7(\frac{1}{10})^7(\frac{9}{10})^3$

$_{10}C_3(\frac{1}{10})^3(\frac{9}{10})^7$ $_{10}C_8(\frac{1}{10})^8(\frac{9}{10})^2$

$_{10}C_4(\frac{1}{10})^4(\frac{9}{10})^6$ $_{10}C_9(\frac{1}{10})^9(\frac{9}{10})^1$

$_{10}C_5(\frac{1}{10})^5(\frac{9}{10})^5$ $_{10}C_{10}(\frac{1}{10})^{10}(\frac{9}{10})^0$

12 Thirteen members of the chess club have voted to determine who the new president will be. The table below shows the preference schedule for the four candidates.

	6 Votes	5 Votes	2 Votes
1st Place	Latesha	Maria	~~Kevin~~
2nd Place	~~Kevin~~	~~Kevin~~	Maria
3rd Place	Maria	Latesha	Latesha
4th Place	Jeff	Jeff	Jeff

The winner of the election will be determined using the plurality method. Kevin had decided to drop out of the election before the votes were counted. What effect, if any, will this have on the results of the election?

A There will be no effect on the result of the election.

B Maria was in the lead before Kevin dropped out, but Latesha will win once he has dropped out.

C Latesha was in the lead before Kevin dropped out, but Maria will win once he has dropped out.

D Kevin was in the lead before he dropped out, but Jeff will win once Kevin has dropped out.

Befor Kevin Drops

Latesha = 6

Maria = 5

Kevin = 2

Jeff = 0

After Kevin Drops

Latesha = 6

Maria = 7

Jeff = 0

Name_____ Discrete Review Date_____

13 A company has five board members. The board uses a weighted voting system to make decisions. At least 13 votes are needed to pass a motion. The weight of each board member's vote is listed below.

7, 5, 4, 2, 1

[13: 7, 5, 4, 2, 1]

How many different winning coalitions are there?

$2^5 - 1 = 32 - 1 = 31$ ← total

A 6

B 8

C 9

D 11

14 A series is shown below.

$$\sum_{n=1}^{\infty}(2n-1)$$

Which is true about the series?

A The series converges to -1.

B The series converges to 1.

C The series converges to 2.

D The series diverges.

— Diverges because the sum goes to infinity.

— It is a Arithmatic Series too

15. An outlier is an individual value that:

A) extends the pattern.
B) deviates from the pattern.
C) determines the strength of the relationship.
D) outlines the general form of the data.

16. If two variables are negatively associated, then the regression line:

A) has a negative intercept.
B) has a negative slope.
C) has negative coefficients.
D) is valid for only negative values.

17. If the regression line is $y = 4 - 3x$, then the variables:
    A) have a positive association.
    B) have a negative association.
    C) have an association that is sometimes positive and sometimes negative.

18. If the variables have a negative association, then their correlation:
    A) must be less than -1.
    B) must be between -1 and 0.
    C) must be between 0 and 1.
    D) must be greater than 1.

19. If the correlation between two variables is -1, then the points of their scatterplot:
    A) all lay within 1 unit of the regression line.
    B) all lay within ½ unit of the regression line.
    C) all lay on the regression line.
    D) lay so that exactly half of the points are on each side of the regression line.

20. How does an outlier effect the correlation?
    A) A single outlier has no effect.
    B) A single outlier has minimal effect.
    C) A single outlier can change the value of the correlation, but not its sign.
    D) A single outlier can change the value and the sign of the correlation.