

GRADED ASSIGNMENTS SOLUTIONS



WEEK -2

- English
- Maths
- CT
- Statistics



Week 2 English Graded Assignments

1. Identify the part of speech of the underlined word. *She was honoured for her courage.*

Adjective

Adverb

Noun

Verb

Accepted Answers:

Noun

1 point

2. Identify the part of speech of the underlined word. *Catherine was worried about her work.*

Abstract noun

Verb

Noun

Adverb

Accepted Answers:

Verb

1 point

3. Select the correct pronoun. The bus came to a halt by _____.

Himself

Itself

Accepted Answers:

Itself

1 point

4. Select the appropriate option. Golconda Fort is the _____ site I saw in Hyderabad.

Amazing

More amazing

Most amazing

As amazing

]Accepted Answers:

Most amazing

1 point

5. Identify the part of speech of the underlined word. *The red balloon floated away.*

Adverb

Adjective

Verb

Noun

Accepted Answers:

Adjective

1 point

6. Identify the adverb in the following sentence:

She was softly singing to the baby.

Baby

Singing

Softly

She

Accepted Answers:

Softly

0 points

6. Choose the appropriate option.

There is _____ book on the desk.

A

An

The

No article

Accepted Answers:

A

1 point

7. Choose the appropriate option.

The doctor gave me a prescription _____ my headache.

With

At

To

For

Accepted Answers:

For

1 point

8. Choose the appropriate option.

Both Ajay _____ Sanjay are intelligent.

Nor

Or

And

Since

Accepted Answers:

And

1 point

9. ____ coffee taster had his tongue insured for 10 million pounds.

An

A

Accepted Answers:

A

WEEK 2 MATH'S GRADED ASSIGNMENTS

{ Ignore Numbers }

1. A bird is flying along the straight line $2y - 6x = 45$. In the same plane, an aeroplane starts to fly in a straight line and passes through the point $(4, 12)$. Consider the point where aeroplane starts to fly as origin. If the bird and plane collides then enter the answer as 1 and if not then 0 . Note Bird and aeroplane can be considered to be of negligible size.

Answer :- 0

2. A rock is thrown in a pond, and creates circular ripples whose radius increases at a rate of 0.2 meter per second. What will be the value of A, where A is the area (in square meter) of the circle after 20 seconds?

Hint, The area of a circle = πr^2 , where r is the radius of the circle,

Answer :- 16

3. Ramesh works in the MNC Ltd. company as a sales manager. He receives a monthly base salary and a ₹500 commission for each unit he sells. At the end of the month he figures out that he sold 100 units and received ₹80,000 at the end of the month. How much is Ramesh's monthly base salary?

Answer :- ₹ 30,000

3. State Government wants to connect the state road to the national highway from a town. There are 3 possible locations in the town A,B and C to connect to the National Highway whose locations are given by coordinates $(3, 8), (5, 7), (6, 9)$. The National Highway connects the 2 points $(2, 1), (10, 7)$ and You, being the contractor, have the freedom to select any one of the 3 possible locations in the town.

Hint Always select the shortest path to construct the road.

Note: 1 unit = 100 meter

Answer the following questions.

Answer the following questions.

(a) What point will you select to build the road?

- A
- B
- C
- None

Answer: Point B

[MCQ:1 Marks]

(b) What is the minimum length of road in meter required to construct to connect to the National Highway?

Answer :- 300m

2. If p is the length of perpendicular from the origin to the line whose intercept of the axes are a and b , then which of the following options always holds? (1 marks)

- Option 1: $\frac{1}{p^2} = \frac{1}{a^2} - \frac{1}{b^2}$
- Option 2: $\frac{1}{p^2} = \frac{1}{(a+b)^2} + \frac{1}{(a-b)^2}$
- Option 3:** $\frac{1}{p^2} = \frac{1}{a^2} + \frac{1}{b^2}$
- Option 4: $\frac{1}{p^2} = (\frac{1}{a} + \frac{1}{b})^2$

3. If p and q are the lengths of the perpendiculars from the origin to the lines $x \cos\theta - y \sin\theta = k \cos 2\theta$ and $x \sec\theta + y \operatorname{cosec}\theta = k$, $k \neq 0$, respectively. Which of the following options always holds? [Hint: You may have to use the following formulas: $\sin 2\theta = 2\sin\theta \cos\theta$ and $\sin^2\theta + \cos^2\theta = 1$] (1 marks)

- Option 1: $p^2 + q^2 = k^2$
- Option 2:** $p^2 + 4q^2 = k^2$
- Option 3: $p^2 - q^2 = k^2$
- Option 4: $4p^2 + q^2 = k^2$

7. To determine the gas constant R , two students A and B perform an experiment based on the ideal gas equation given as $Pv = RT$. Both use the same gaseous sample having $v = 16.6 \text{ m}^3/\text{mol}$ and reported the approximate value of R as 8.3 J/(Kmol) using the minimisation of sum squared error. The data collected by both the students are reported below. Choose the correct options: (1 marks)

$T(K)$	274	276	278	282	290
$P(Pa)$	137	139	142	141	142

Data collected by student A.

$T(K)$	276	280	284	288	290
$P(Pa)$	137	141	142	148	145

Data collected by student B.

- Option 1: A has better fit than B. ✗
- Option 2: B has better fit than A. ✓
- Option 3: A and B both have same fit. ✗

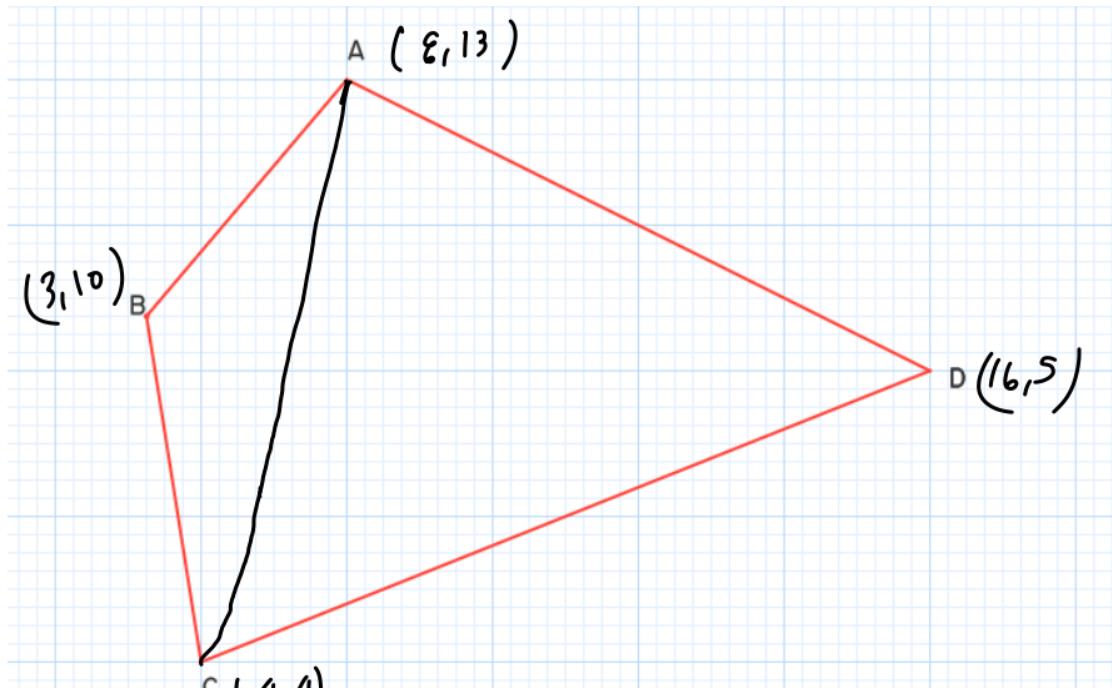
9. A line perpendicular to the line segment joining the points $A(1, 0)$ and $B(2, 3)$, divides it at C in the ratio of $1 : 3$. Then the equation of the line is (1 marks)

- $2x + 6y - 9 = 0$
- $2x + 6y - 7 = 0$
- $2x - 6y - 9 = 0$
- $2x - 6y + 7 = 0$

The total expenses of mess consists of fixed cost and the variable cost, Variable cost is proportional to the number of inmates of the mess, The total expenses are 16000 rupees when 12 members in the mess, and 20000 rupees when 20 members in the mess, find the Fixed cost of the mess.

Answer :- 10000

7. A surveyor needs to determine the area of a land show in Fig below. The coordinates of the four vertices of the land are as follows: A (8, 13) B (3, 10) C (4, 4) D (16, 5)



(41)

Fig:Survey Area

Answer: 68.5 Sq Unit

A fitness trainer is analyzing the weight loss progress of his best client over a period of 6 months, to use it as for marketing. He recorded the weight of the client at the beginning and end of each month. Using straight line fitting, he came up with an equation $W = -8t + 98$, where W = Weight in Kg t = time in months. Now you want to check whether this equation is correct or not so you collected the data from the gym the data is given in table below.

Time (months)	Weight (Kgs)
0	98
1	90
2	82
3	74
4	66
5	57
6	49

Answer the following questions

- (a) Equation that fitness trainer came up with $W = -8t + 98$ is well fitted to data.
(Equation is said to be well fitted to data if the SSE is less than 5) True/False

Answer: True [MCQ:1 Marks]

- (b) You were impressed by the performance of the fitness trainer, so you want to get trained under him, you assumed that the rate of weight loss (weight loss per month) will be same as the case of the best client mentioned in the question, Considering your assumption is true, How many days are required for you to loss weight from 100 kg to 72 kg.

Note: 1 month has 30 days

Answer :- 105 Days

A carpenter has a call out fee (basic charges) of ₹100 and also charges ₹90 per hour. Which of the following are true? (1 marks)

- Option 1: Following the same notations of y, x , equation of the total cost is represented by $y = 100x + 90$. **X**
- Option 2:** If y is the total cost in (₹) and x is the total number of working hours, then the equation of the total cost is represented by $y = 90x + 100$.
- Option 3:** The total charges, if the carpenter has worked for 4 hours, would

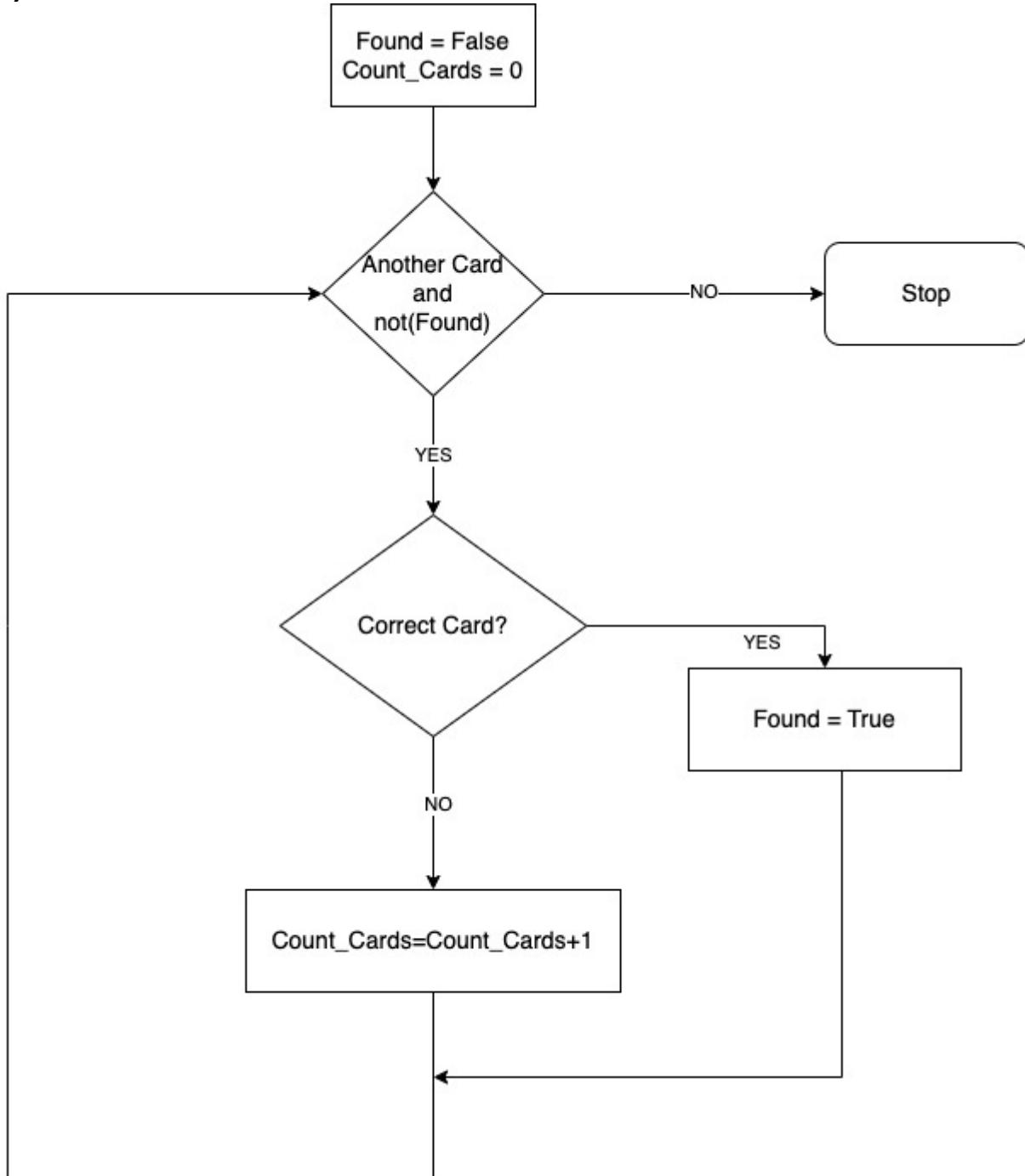
be ₹420. 

- Option 4: If the carpenter charged ₹350 for fixing a L-stand and changing door locks, then the number of working hours would be approximately one hour and 53 minutes. 

Week 2 Provisional CT Graded Assignments

(Provisional Means These Are Not Final Answers , Final Will Be Released On Last Day Of Deadline)

Use the following flowchart to answer the below two questions 1) and 2).



2 points

1.If the **Correct Card** is found after 11 iterations of **Another Card**, the **Correct Card** is the 11th , then what is the value of **Count-Cards**?

(a) 9

(b) 10

(c) 11

(d) 12

2 points

2.Let's use the **Scores** dataset and the **Correct Card** is the user's requirement. How many possible score-cards does the iteration go through if the user requirement is found in the **First Card** and all other cards do not match?

(a) 30

(b) 20

(c) 10

(d) 1

3 points

3.The following procedure finds the minimum marks in **Chemistry scored** by a **Male** student from the **Scores** dataset. However, the programmer may have made mistakes in one or more steps. Identify any such steps (if any).

Step 1: Arrange all cards in a single pile called Pile 1

Step 2: Maintain a variable MIN-CHEMISTRY and initialize with first Chemistry SCORE where Gender = M

Step 3: If Pile 1 is empty then stop the iteration

Step 4: Read the top card of Pile 1

Step 5: If Gender == M and Chemistry \geq MIN-CHEMISTRY

Step 6: Update Chemistry = MIN-CHEMISTRY

Step 7: Move the current card to Pile 2 and repeat from step 3

(a) 2

(b) 3

(c) 4

(d) 5

(e) 6

3 points

4.A programmer has written the following algorithm to find the number of students who are below the **Avg- Marks** in **Scores** dataset. He/she committed a mistake. Can you identify it?

Step 1: Arrange all cards cards in Pile 1

Step 2: Calculated Average marks are stored into Avg-Marks.

Step 3: Initialize Student-Count with 0

Step 4: Stop iteration, when Pile 1 is empty

Step 5: Read one top card from Pile 1
Step 6: If Avg-Marks \leq TOTAL then add value 1 to Student-Count
Step 7: Move the current card to Pile 2 and repeat Step 4

- (a) Step 4
- (b) Step 5
- (c) Step 6
- (d) Step 7

5.The shopping bill dataset contains **Shop Names [Big Bazar, SV Stores, Sun General, More Supermarket]**. The programmer wants to find out the **store-wise** minimum bill amount. How many variables are required?

Correct Answer :- 8

3 points

6.Assume that there are 5 cards in the Paragraph words dataset [' It', 'is', 'a', 'rainy', 'Monday.']. What is the value of A after the below algorithm is executed?

Correct Answer :- 1

7.Step 1: Arrange all cards in Pile 1, cards repeated
Step 2: Initialize A with 10
Step 3: Stop iteration, when Pile 1 is empty
Step 4: Read one top card from Pile 1
Step 5: If A \geq LetterCount then Update A = LetterCount
Step 6: Move the current card Pile 2 and repeat Step 3

3 points
2 points

If X is a card from the **Shopping Bill** dataset. Identify the list of fields that can be accessed through card X

- (a) X.Item
- (b) X.Diary/Food
- (c) X.Qty
- (d) X.Milk

3 points
8.Which of the following is the correct pseudocode to find the longest verb length in the **Paragraph Words** dataset?
(a)

LongestVerb=NONE

```
MaxVerbLength=0
While (Pile 1 has more cards)
{
    Read top card X in Pile 1
    if ( X.PartOfSpeech == "Verb" AND MaxVerbLength < X.LetterCount)
    {
        LongestVerb = X.Word
    }
}
```

(b)

LongestVerb = NONE

MaxVerbLength = 0

While (Pile 1 has more cards)

```
{
    Read top card X in Pile 1
    if ( X.PartOfSpeech == "Verb" AND MaxVerbLength < X.LetterCount)
    {
        LongestVerb = X.Word
        MaxVerbLength=X.LetterCount
    }
}
```

(c)

LongestVerb = NONE

While (Pile 1 has more cards)

```
{
    Read top card X in Pile 1
    if ( X.PartOfSpeech == "Verb" AND LongestVerb < X.LetterCount)
    {
        LongestVerb = X.Word
    }
}
```

(d) None of the above

9.To find out the Minimum Total Marks in **Scores** dataset. Recommended initial value of **Min-Total-Marks** variable

(a) 100

(b) 0

(c) 1

(d) 282

2 points

10.Match the following using the pseudocode concept

Column 1

Column 2

- a) == i) True
b) = ii) Equality
c) $56 \geq 7$ iii) Assignment

(a) a - ii), b - i), c - iii)

(b) a - iii), b - i), c - ii)

(c) a - ii), b - iii), c - i)

(d) a - iii), b - ii), c - i)

Week 2 STATISTICS Graded Assignments

(Provisional Means These Are Not Final Answers , Final Will Be Released On Last Day Of Deadline)



- 1.Which of the following statements is/are incorrect?

To represent the share of a particular category, bar chart is the most appropriate graphical representation.

The multiplication of the total number of observations and relative frequency of a particular observation should be equal to the frequency of that observation.

Mean can be defined for a categorical variable.

Mode of a categorical variable is the widest slice in a pie chart.

Figure 2.1.G shows the pie chart representation of the weightage distribution of 5 different subjects in an exam. Based on this information, answer questions (2) and (3).

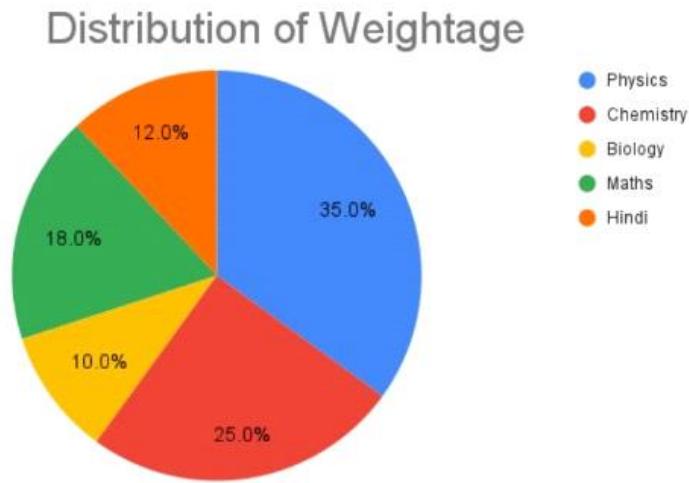


Figure 2.1.G: Weightage distribution of 5 different subjects

- 2.If the exam is for a total of 500 marks, then what is the aggregate distribution of marks in Physics, Maths and Biology?

Answer:-315

**1 point
1 point**

- 3.Choose the correct statement(s):

The pie chart is misleading because it does not obey the area principle.

The pie chart has round off errors.

The pie chart is not a misleading graph.

The slices of pie chart adds up to 100%.

Table 2.1.G represents the distribution of 200 cricket players trained by different cricket academies in Chennai.

Academy	Number of Players
A	a
B	b
C	50
D	d
E	75

Table 2.1.G

If each academy has trained at least one player, then based on the given information, answer questions (4), (5), (6) and (7).

4.What is the combined relative frequency of the academy A,C,B and D (Enter the answer correct to 3 decimal places)

0.370

1 point
1 point

5.Median of the given data is:

Academy C

Academy E

Academy D

Median is not defined for the given data

Insufficient data

1 point

6.Mode of the given data is:

Academy C

Academy E

Academy D

Mode is not defined for the given data

Insufficient data

1 point

7.Which of the following graphical representations is appropriate for the number of players in each academy for the given data in Table 2.1.G?

Bar chart

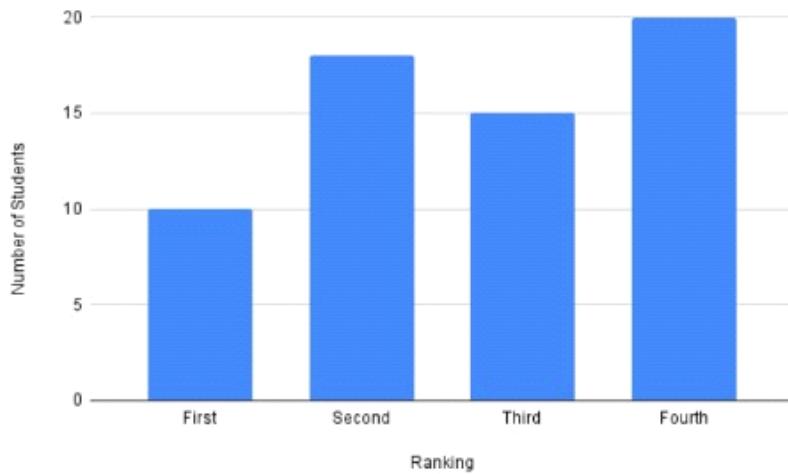
Pie chart

Pareto chart

Both bar chart and pareto chart

1 point

8.The data of number of students sharing the same rank is collected. Which of the following is/are suitable to represent the collected data?



1 point

9.Choose the correct statement about categorical data:

Categorical data have measurement units.

Categorical data can take numerical values, but no meaningful mathematical operations can be performed on it.

Categorical data is quantitative in nature.

All of the above

The distribution of grades in a Statistics class consisting of 80 students is shown by a pie chart in Figure 2.2.G. Based on the information given, answer the questions (10) and (11)

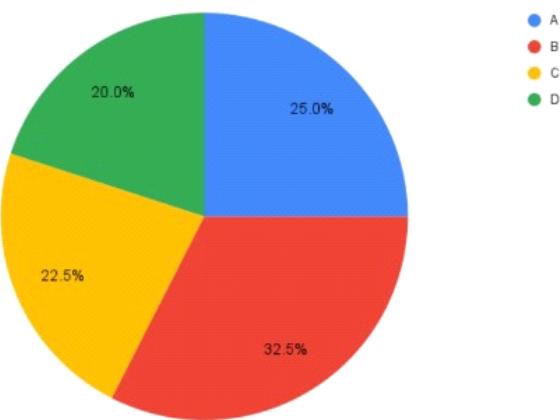


Figure 2.2.G: Distribution of grades in a Statistics class

10. How many students have secured B grade?

Answer:- 26

1 point

11. What is the ratio of the students who secured a C grade to the students who secured an A grade?

Answer:- 0.9

1 point