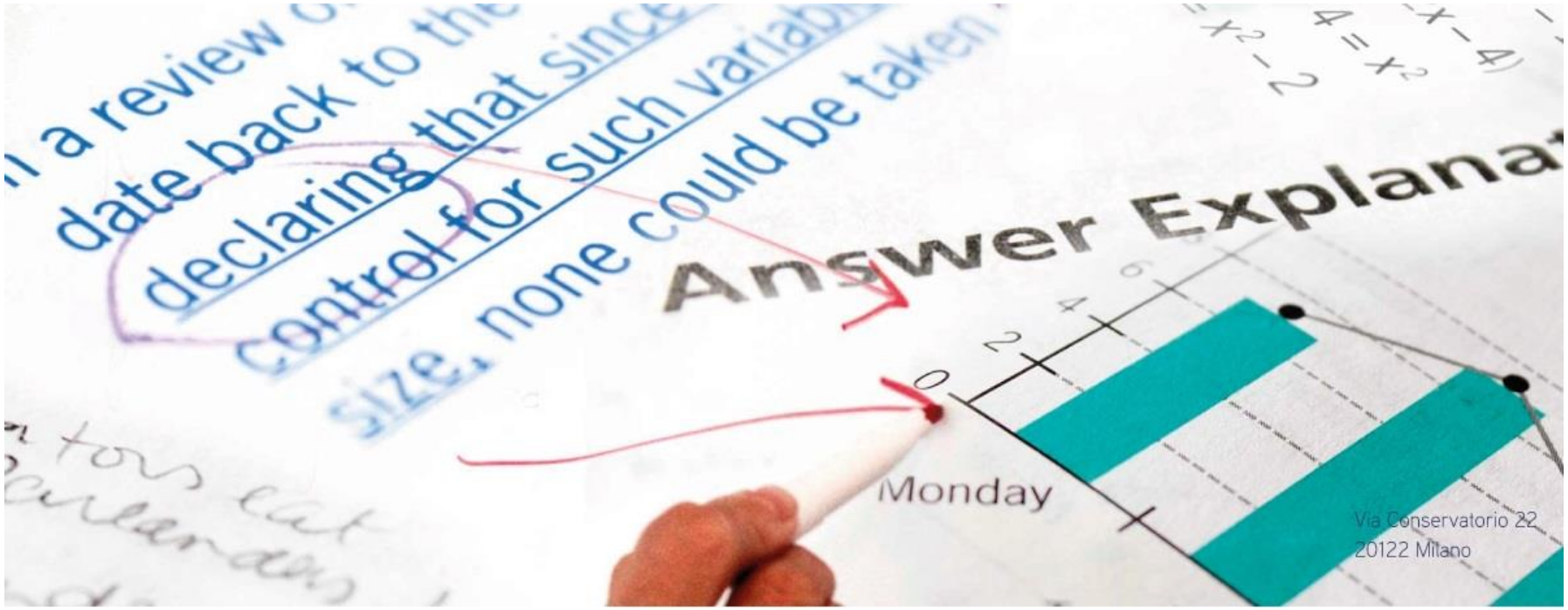


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# Graphic Interpretation (GI)

# Example 1

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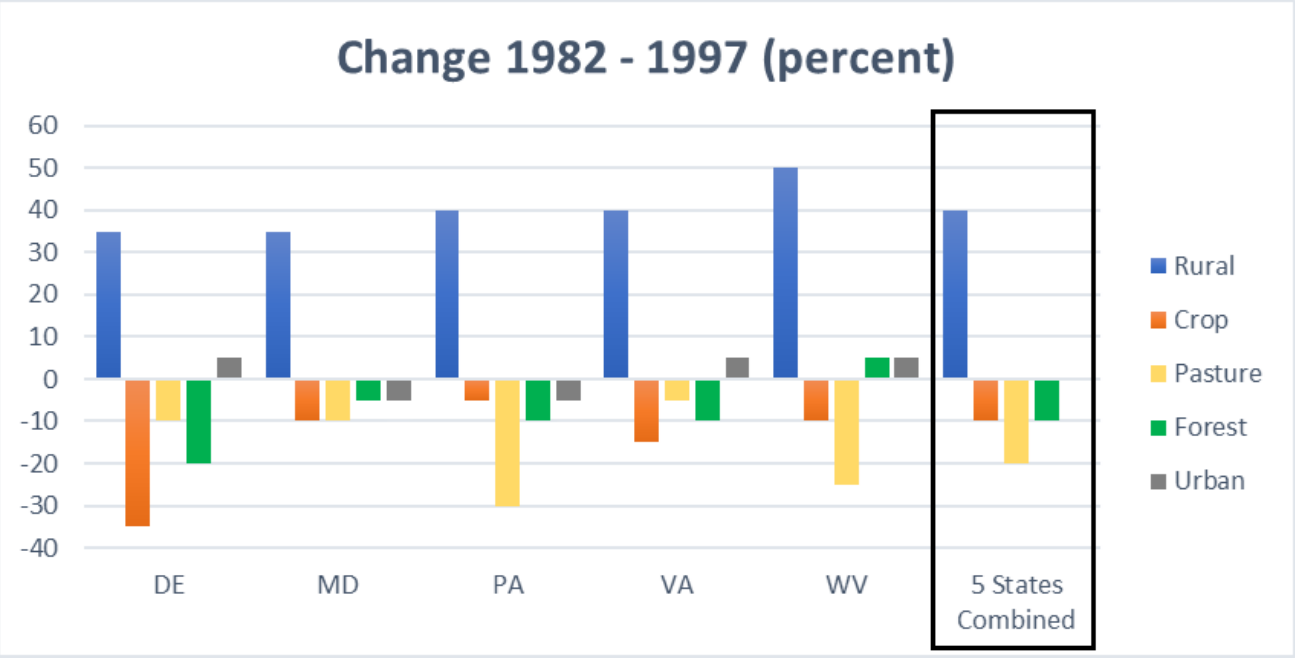


The graph shows the changes in major land cover types in the given five-state region from 1982 to 1997.
The graph shows the percent change in the area of different land cover types across five states (DE, MD, PA, VA, and WV) as well as for these five states combined, from 1982 to 1997.

Which Parts do we need?

Rural: - 5-states combined (Σ)
- PA

Crop: - DE
- MD

1) If in 1997 Pennsylvania's (PA) rural land coverage equaled the average rural land coverage of the five states combined, then in 1982 Pennsylvania's rural land coverage was _____ of the combined rural land coverage for all five states.

a. 10%
b. 20%
c. 25%
d. 50%
e. 75%

2) If Delaware (DE) and Maryland (MD) had similar acreage of land under crop in 1997, Delaware would have had approximately _____ more acreage of cropland as compared to that in Maryland in 1982.

a. 25%
b. 30%
c. 35%
d. 40%
e. 45%

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# Example 2

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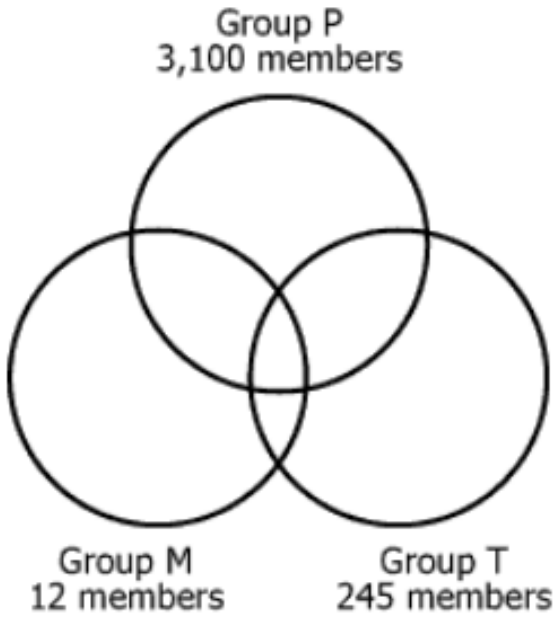
The diagram shows the relationships between 3 groups of stockholders of Company HQS and the number of stockholders in each group

- Group P consists of those stockholders who receive a paper copy of the annual report.
- Group M consists of the majority stockholders.
- Group T consists of those stockholders who are traders

Exactly 8 stockholders belong to all three groups. It is possible that one or more of the regions in the diagram do not contain any members.




1. If all majority stockholders receive paper reports, then _____is the maximum number of traders who could receive paper reports.

a. 8

b.12

c.237

d.245

2. If exactly 10 majority stockholders receive paper reports, then _____ is the maximum number of traders who could also be majority stockholders.

a. 0

b.2

c.8

d.10

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# Example 3

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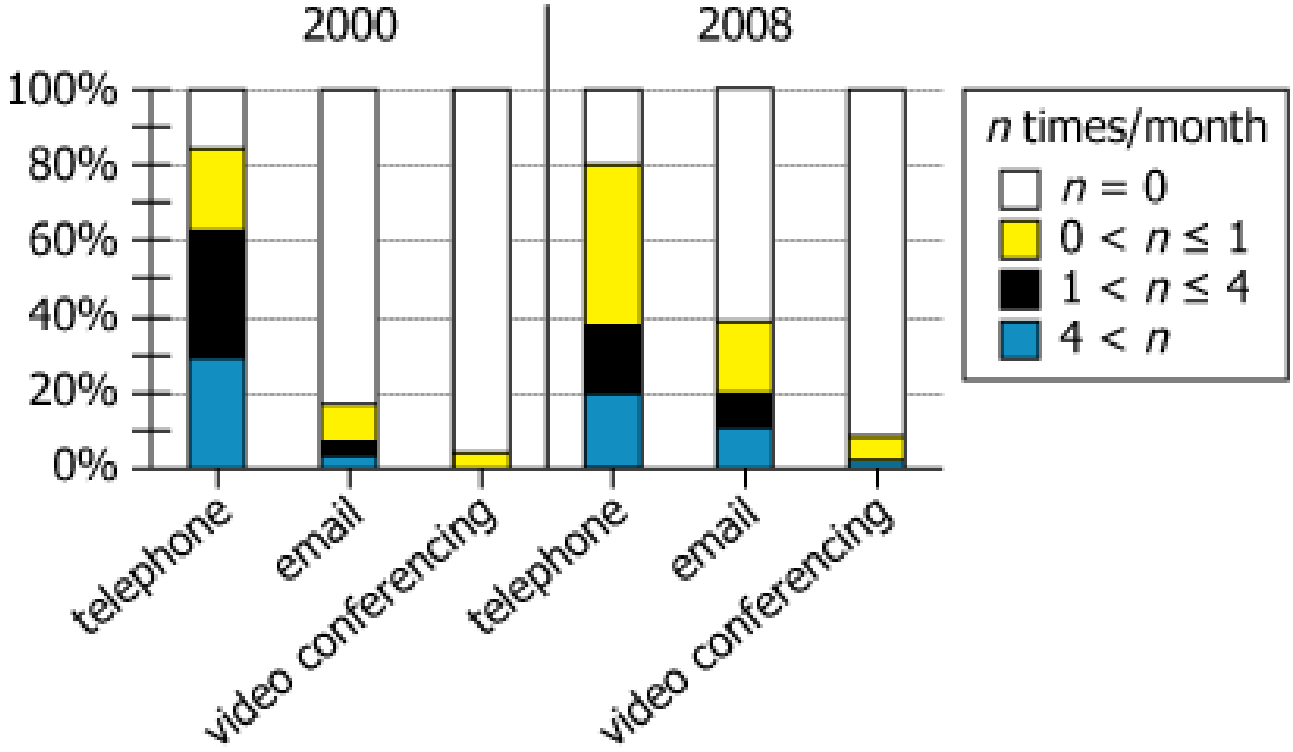
The graph shows data for physicians who, in 2000 and 2008, were surveyed about the average number of times per month they used each of 3 methods (telephone, email, and video conferencing) to communicate with their patients. The bars represent the percentage of the respondents who reported using the indicated method the indicated number of times per month.




1. It must be the case that the median number of times per month respondents reported having communicated with patients by _____ in the 2008 survey was less than that in the 2000 survey.

a. telephone
b. email
c. video conferencing

2. It must be the case that the percentage of respondents who reported having communicated with patients by both _____ was as great or greater in the 2008 survey as it was in the 2000 survey.

a. telephone and email
b. telephone and video conferencing
c. email and video conferencing

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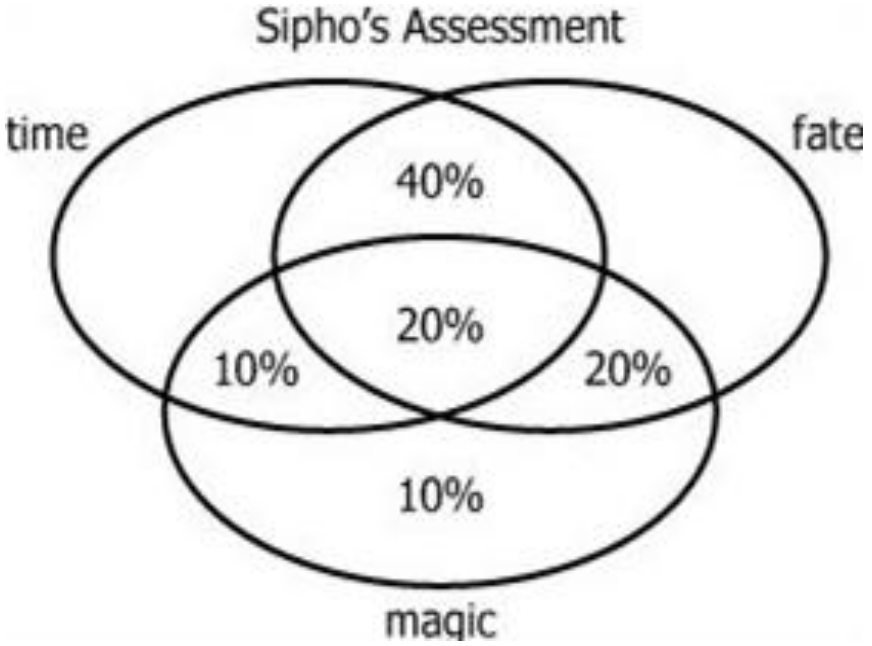
# Example 4

English Business Services

Two students are discussing three themes from *One Hundred Years of Solitude* by Gabriel García Márquez.

Sipho maintains that every portion of the novel addresses at least one of the themes of Time, Fate, or Magic, but that only 20% of the novel addresses all three themes and that 10% addresses magic only (among these three themes). Further details of his assessment are provided in the Venn diagram.




Anika agrees with much of Sipho's assessment. In particular, for any portion of the novel that, according to Sipho's assessment, addresses the theme of time, Anika agrees that the portion indeed addresses the theme of time. Likewise for the themes of fate and magic. However, contrary to Sipho's assessment, Anika maintains that every portion of the novel that addresses the theme of magic also addresses the theme of fate.

Anika maintains that _____ of the novel that addresses the theme of time also addresses the theme of fate.

a.40%
b.50%
c.60%
d.80%
e.100%

Anika maintains that _____ % of the novel addresses the theme of magic.

a.30
b.40
c.50
d.60

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# Table Analysis

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# Example 1

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| | A | B | C | D |
|---|---|---|---|---|
| **Country** | **Percent of 20+ year olds in tertiary education** | **Rank, percent of 20+ year olds in tertiary education** | **Public spending perstudent, tertiary level** | **Rank, public spending per student, tertiary level** |
| Greece | 56 | 1 | $26.70 | 92 |
| Belgium | 46 | 2 | $17.60 | 113 |
| France | 42 | 3 | $30.30 | 86 |
| Spain | 38 | 4 | $19.80 | 107 |
| United States | 38 | 4 | $29.30 | 97 |
| Canada | 37 | 6 | $46.10 | 58 |
| Ireland | 35 | 7 | $27.80 | 90 |
| United Kingdom | 33 | 8 | $26.30 | 93 |
| Poland | 33 | 8 | $20.20 | 106 |
| Australia | 33 | 8 | $24.90 | 96 |
| New Zealand | 33 | 8 | $25.50 | 95 |
| Netherlands | 32 | 12 | $43.00 | 62 |
| Finland | 31 | 13 | $39.70 | 66 |
| Portugal | 30 | 14 | $28.20 | 88 |
| Norway | 28 | 15 | $46.50 | 57 |
| Italy | 26 | 16 | $26.00 | 94 |
| Hungary | 26 | 16 | $30.50 | 85 |
| Czech Republic | 23 | 18 | $33.90 | 75 |
| Sweden | 23 | 18 | $53.50 | 51 |
| Slovakia | 21 | 20 | $30.80 | 83 |

The following tables show the data on “tertiary education”

Note that “tertiary education” means all education following high school level: undergraduate as well as graduate studies. Here, “in tertiary education” includes those now enrolled in those programs, as well as all who have completed degrees.

Note, also, many of the countries in the table have a high percent of total students in the table, and therefore rank considerably lower in public spending per tertiary student: countries with comparatively few students at the tertiary level rank much higher than the countries listed in the table. **→Beyond the table**

| Yes | No | |
|---|---|---|
| | | No country with more than a quarter of people over 20 year old in tertiary programs spends more than $50/student on tertiary programs |
| | | No country that spends more than $40/student on tertiary programs has more than 40% of all people over 20 year old in tertiary programs. |
| | | No country that spends more than $20/student on tertiary programs has less than 20% of all people over 20 year old in tertiary programs. |

# Example 2

English Business Services

| Number of attempts | | | | | | |
|---|---|---|---|---|---|---|
| **Level** | **1 to 5** | **6 to 10** | **11 to 15** | **16 to 20** | **21 to 25** | **Total completed** |
| 1 | 26 | 28 | 15 | 2 | 0 | 71 |
| 2 | 91 | 8 | 1 | 0 | 0 | 100 |
| 3 | 65 | 13 | 9 | 2 | 2 | 91 |
| 4 | 73 | 17 | 5 | 3 | 1 | 99 |
| 5 | 33 | 22 | 6 | 7 | 1 | 69 |
| 6 | 95 | 5 | 0 | 0 | 0 | 100 |
| 7 | 62 | 14 | 10 | 8 | 3 | 97 |
| 8 | 82 | 15 | 2 | 0 | 0 | 99 |
| 9 | 13 | 17 | 11 | 5 | 3 | 49 |
| 10 | 2 | 7 | 6 | 3 | 1 | 19 |
| 11 | 51 | 9 | 8 | 8 | 1 | 77 |
| 12 | 9 | 5 | 8 | 2 | 6 | 30 |
| 13 | 20 | 13 | 10 | 7 | 5 | 55 |
| 14 | 0 | 0 | 3 | 2 | 4 | 9 |
| 15 | 8 | 12 | 6 | 8 | 4 | 38 |

The designers of a video game hired 100 game testers to play the game to determine whether the level of difficulty was appropriate. Each of the 100 testers made at most 25 attempts to complete each of the game's 15 levels (Levels 1–15).

When a tester completed a level, he or she then made no further attempts at that level. For each of the levels, the table shows, among the testers who completed the level, the total number of testers whose number of attempts to complete that level fell in various ranges.

| Must be 20 or less | Could be greater than | |
|---|---|---|
| | | Mean of the total number of attempts to complete for all testers who completed the level |
| | | Median of the total number of attempts to complete for all testers who completed the level |
| | | Range of the total number of attempts to complete for all testers who completed the level |

# Multi-Source Reasoning (MSR)

Synthesize information from multiple sources

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# Example 1

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**Tab 1 - Plan:**

Vegfood, a food wholesaler, plans to sell three different nut blends to grocery stores. Each blend will consist of two to four types of nuts and will be marketed in 300gram (g) packages, each containing a total of 10 standard servings. Vegfood's plan stipulates that the blends should meet the following criteria:

1. The total price paid to suppliers for the ingredients of each blend must not exceed 50% of the blend's wholesale selling price.

2. Each blend's average nutritional profile per serving must comply with at least two of the following constraints for nutritional content:

- Carbohydrate: at most 10 g
- Protein: at least 5 g
- Dietary fiber: at least 4 g
- Saturated fat: at most 3 g

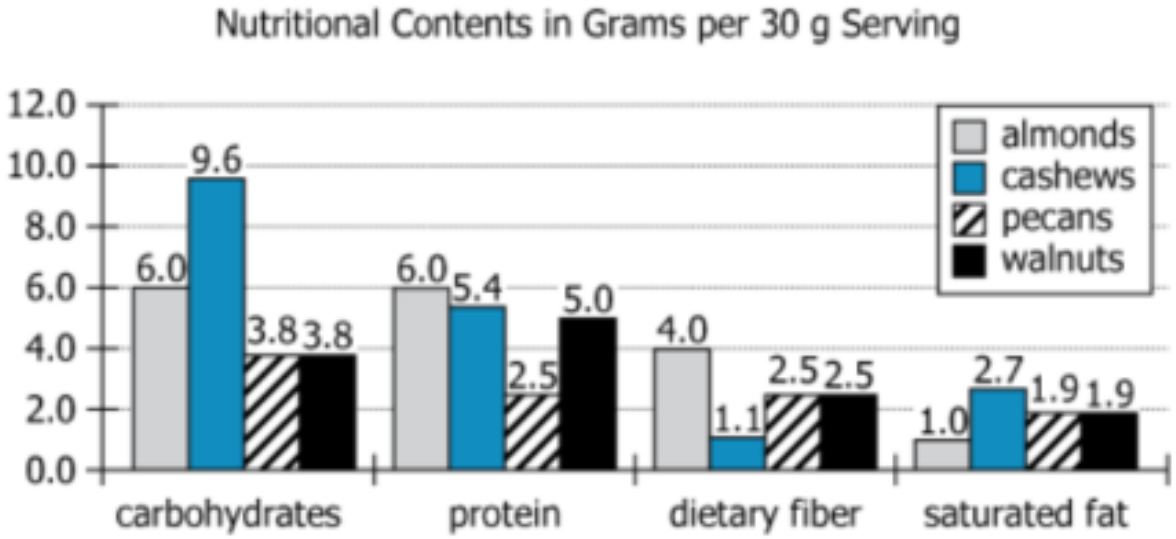
## Tab2 - Ratios:

The following table shows initial proposals from Vegfood's marketing department concerning the proportions, by weight, of each type of nut that the blends would contain. The table also gives the maximum prices that the marketing department recommended should be paid to Vegfood's suppliers for each type of nut.

| | Almonds €7.00/kg | Cashews €6.00/kg | Pecans €7.00/kg | Walnuts €6.00/kg |
|---|---|---|---|---|
| Blend 1 | 0.4 | 0.2 | 0.1 | 0.3 |
| Blend 2 | 0.2 | 0.4 | 0.4 | 0.0 |
| Blend 3 | 0.3 | 0.0 | 0.3 | 0.4 |

## Tab 3 - Nutrients:

The following graph shows important nutritional contents for a 30 g serving of each of the four types of nuts that Vegfood plans to use in the blends.

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# Example 2

English Business Services

**Teb1-Project:**

Technisoft is a software company that provides a range of software solutions. Its founding members as well as employees come from reputed technology institutions in the country and carry rich experience of working on cutting edge technologies. Technisoft segregates each live project strictly into one of the three categories - Software Development Projects, Software Testing Projects, and Software Maintenance Projects.

Software Development Projects: Involve the process of end-to-end computer programming, documenting, testing, and bug fixing required in creating and maintaining applications and frameworks entailed in a software release life cycle and resulting in a software product.

Software Testing Projects: Involve the process of executing a program or application with the intent of finding the software bugs. This process can also be stated as the process of validating and verifying that a software program or application or product works as expected.

Software Maintenance Projects: Involve modification of a software product after delivery to correct faults and to improve performance or other attributes.

**Tab2-Labor:**

Technisoft balances its workload and manpower by pre-defining the number of personnel working on each project, as per the type of the project.

For a Software Development Project, Technisoft deploys one Project Manager, two Lead Engineers, four Software Developers, and two Testing Engineers.

For a Software Testing Project, Technisoft deploys one Project Manager, one Lead Engineer, one Software Developer, and two Testing Engineers.

For a Software Maintenance Project, Technisoft deploys one Project Manager, one Lead Engineer, one Software Developer, and one Testing Engineer.

Hence, size of the project defines the duration; bigger projects take longer than smaller projects to complete but Technisoft never increases the predefined number of personnel to expedite a project.

| Project | Project Mng. | Lead Eng. | Soft. Dev. | Testing Eng. |
|---|---|---|---|---|
| **Development** | 1 | 2 | 4 | 2 |
| **Testing** | 1 | 1 | 1 | 2 |
| **Maintenance** | 1 | 1 | 1 | 1 |

**Tab3- Pricing:**

Technisoft charges its clients by the man month rates of the personnel involved in the projects. Technisoft charges $12,000 per month for a Project Manager, $8,000 per month for a Lead Engineer, $6,000 per month for a Software Developer, and $5,000 per month for a Testing Engineer.

1. For each of the following, select True if the statement is true as per the information provided. Otherwise select False.

| True | False | |
|---|---|---|
| | | Six months of Software Development cost the same as one year of Software Maintenance. |
| | | Six months of Software Testing cost more than seven months of Software Maintenance. |
| | | Technisoft needs more number of Software Developers than number of Lead Engineers. |

2. For each of the following, select Yes if the statement is inferable from the information provided. Otherwise select No.

| Yes | No | |
|---|---|---|
| | | A client with a budget of $300,000 and a project requirement of 40 man months can afford Technisoft. |
| | | A client with a budget of $300,000 and a project timeline of six months can afford Technisoft. |
| | | Technisoft needs more number of Software Developers than number of Testing Engineers. |

3. Based on the information given in the passage, what will be the cost of a project that involves three months of Software Development, three months of Software Testing, and six months of Software Maintenance?

| | |
|---|---|
| | $372,000 |
| | $444,000 |
| | $480,000 |
| | $510,000 |
| | $524,000 |

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# Two-Part Analysis

complex problems that have two components, or 'parts' to the answer

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# Example 1

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Ribonucleic acid (RNA) is a molecule built from sequences of smaller molecules called nucleobases. RNA nucleobases are of 4 different types: adenine (A), cytosine (C), guanine (G), and uracil (U). Consider the collection of all possible RNA sequences consisting of 12 nucleobases, 3 of each type. An RNA sequence will be selected at random from this collection and the first 3 nucleobases of the sequence will be detached from the sequence.

In the table, select the probability that the 3 nucleobases are all of the same type, and select the probability that they are of 3 different types. Make only two selections, one in each column.

| All the same type | 3 different types | |
|---|---|---|
| | | $\frac{1}{55}$ |
| | | $\frac{9}{220}$ |
| | | $\frac{9}{110}$ |
| | | $\frac{9}{55}$ |
| | | $\frac{27}{55}$ |

Q1. Probability of all three be the same?

Q2. Probability of all three be the different?

# Example 2

English Business Services

In June 1990, a small academic press published an initial run of 2,500 copies of linguist Chloe Vermeulen's first book, Speech and Speaking. Because the first run was selling well, a second, larger run was produced in June 1995. Total sales for the period from June 1995-June 2000 represented an increase of 52 percent over total sales for the preceding five years; by June 2000, Vermeulen's book had sold a total of 3,843 copies. In 2000, Speech and Speaking was cited in an influential paper; subsequently, for the period June 2000-June 2005, sales of Vermeulen's book were double the sales for the previous five-year period.

In the table, identify the number of books that most closely approximates the total sales of Speech and Speaking for each of the five-year periods June 1990-June 1995 and June 2000— June 2005, based on the information given. Make only two selections, one in each column.

| June 1990–June 1995 | June 2000–June 2005 | Total sales for the period (number of books) |
|---|---|---|
| | | 1,320 |
| | | 1,530 |
| | | 2,530 |
| | | 2,640 |
| | | 3,800 |
| | | 4,640 |

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# Data Sufficiency (DS)

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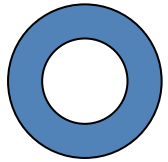
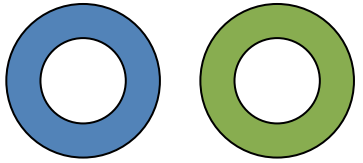
A. Statement (1) ALONE is sufficient, but statement (2) alone is not sufficient. → **ONLY I**



B. Statement (2) ALONE is sufficient, but statement (1) alone is not sufficient. → **ONLY II**

C. BOTH statements TOGETHER are sufficient, but NEITHER statement ALONE is sufficient. → **TOGETHER**

D. EACH statement ALONE is sufficient. → **EITHER ONE**



E. Statements (1) and (2) TOGETHER are NOT sufficient. → **NEITHER**

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# Data Sufficiency

## ➢ Yes/No Questions


## ➢ Value Questions:

- **No value** for the variable OR **more than one** single value **INSUFFICIENT**

- A **SINGLE** numerical value for this variable. **SUFFICIENT**

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# Example 1

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Is $x$ the square of an integer?

1. When $x$ is divided by 12 the remainder is 6.
2. When $x$ is divided by 14 the remainder is 2

# Example 2

English Business Services

Last year, if Arturo spent a total of $12,000 on his mortgage payments, real estate taxes, and home insurance, how much did he spend on his real estate taxes?

1. Last year, the total amount that Arturo spent on his real estate taxes and home insurance was $33\frac{1}{3}$ percent of the amount that he spent on his mortgage payments.

2. Last year, the amount that Arturo spent on his real estate taxes was 20 percent of the total amount he spent on his mortgage payments and home insurance.

**To receive the full answer key and notes, please email us at:**

**info@toefl-prep-milano.com**

**You can email us your completed answers to receive both feedback and the full solutions, or simply request the solutions without submitting your answers.**

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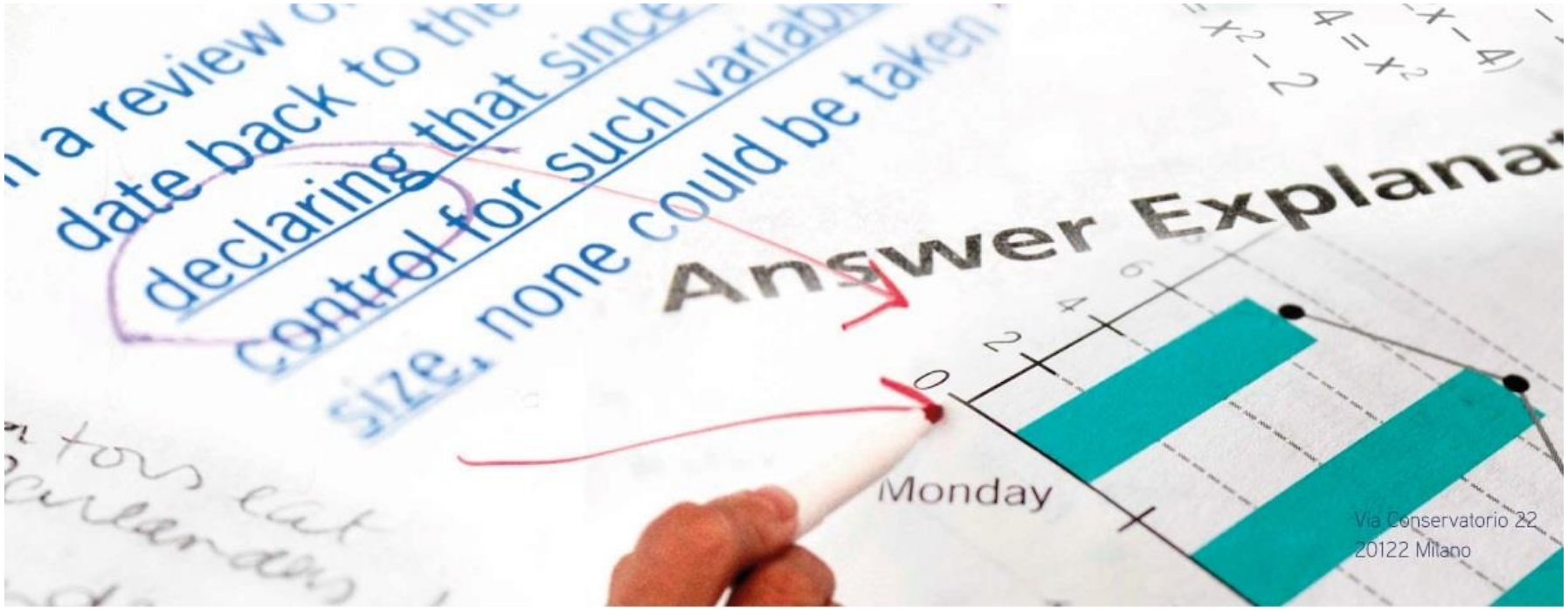


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