GMAT 综合推理分册(上)

目录

一．GMAT 改革

从 2012 年 6 月 5 日开始，全球统一进行改革后的新 GMAT 考试。改革后的 GMAT 考试将新加入 30 分钟的“Integrated Reasoning”综合推理部分，取消了分析性写作的 ISSUE 部分，ARGUMENT 不变。数学(Quantitative)和语文(Verbal)部分均保持不变。下图为改革前(老 GMAT)与改革后(新 GMAT)的考试形式对比。

考试内容	老GMAT	新GMAT
分析性写作 Analytical Assessment	60分钟 两篇（Argument + Issue）	30分钟 一篇Argument
综合推理 Integrated Reasoning	无	30分钟 12题
休息 Optional Break		
数学 Quantitative	75分钟 37题	75分钟 37题
休息 Optional Break		
语文 (阅读，逻辑，语法) Verbal	75分钟 41题	75分钟 41题

另外，现有的 GMAT 考试给出四项成绩：写作(0-6.0)，数学(0-60)，语文(0-60)，总分(0-800)。而改革后的新 GMAT 将会在原有的基础上增加综合推理 IR 的分数(分数区间尚未公布)，不计入 800 总分内。

二．综合推理 Integrated Reasoning (IR)概述

- **Integrated Reasoning** is designed to measure your ability to evaluate information presented in multiple formats from multiple sources – **skills that you already use, and skills that you need to succeed in our data-rich world**.

- **Skills Measured**

  The 30-minute Integrated Reasoning section will test skills that a survey of 740 management faculty worldwide have identified as important for you, as a prospective incoming graduate management student, to know, including:

  - Synthesizing information presented in graphics, text, and numbers
  - Evaluating relevant information from different sources
  - Organizing information to see relationships and to solve multiple, interrelated problems
  - Combining and manipulating information to solve complex problems that depend on information from one or more sources

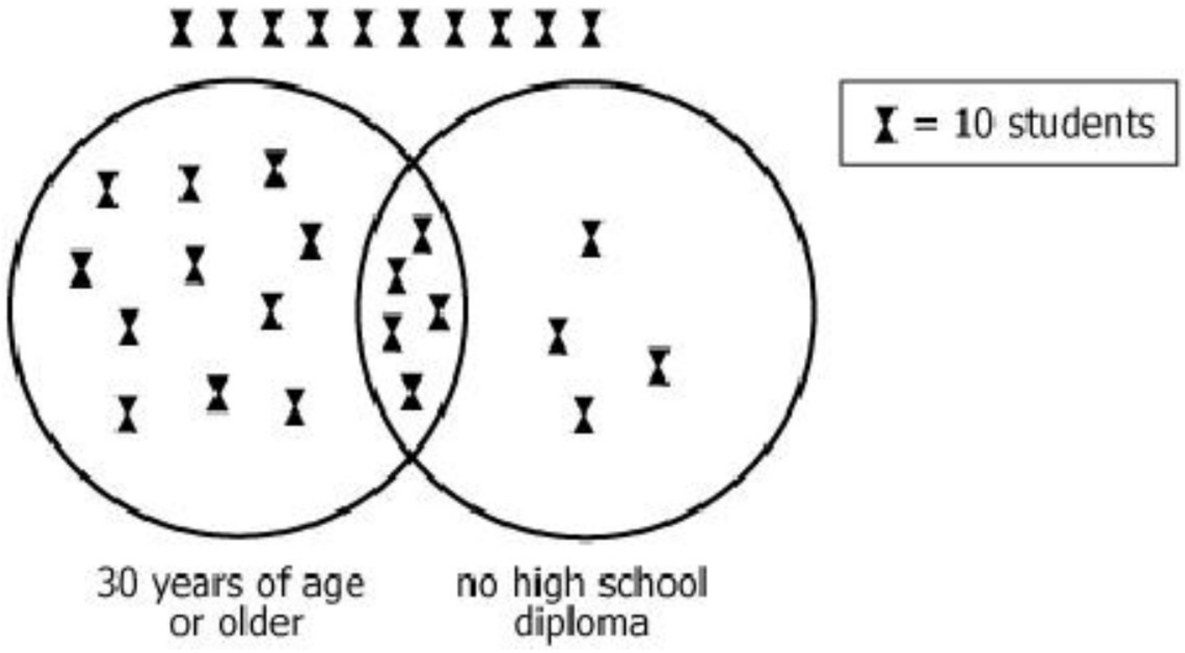
- **注意事项：**
  - 考试界面有计算器可使用。
  - 每页一道题，进行到下一题之前必须回答完上一题，确认后无法返回。
  - 一个题干下可能有一道或多道问题，不同问题及答案之间无关联。
  - IR 部分不是计算机自适应类考试(CAT)，前一题的正确率不会影响后一题。
  - 没有单独 IR 部分的考试，想获得 IR 分数的考生必须在 2012 年 6 月 5 日之后报名新 GMAT 的整个考试。

三．IR 四大题型

1. Graphics Interpretation (图形解读)

题型描述：题目给出一个图表或者图形，考生根据该图通过下拉菜单选择最准确的答案。此题型旨在考查考生对不同图表形式的解读、整合、辨别以及推断能力。

例题：



Refer to the pictograph of a survey of students at Central Community College. Each symbol represents 10 students in a sample of 300. Use the drop down menus to complete each statement according to the information presented in the diagram.

If one student is selected at random from the 300 surveyed, the chance that the student will be under 30 or a high school graduate or both is _____.

- ○ 1 out of 6
- ○ 1 out of 3
- ○ 2 out of 3
- ○ 5 out of 6

If one student is selected at random from the 300 surveyed, the chance that the student will be both under 30 and a high school graduate is _____.

- ○ 1 out of 6
- ○ 1 out of 3
- ○ 2 out of 3
- ○ 5 out of 6

2. Table Analysis (表格分析)

题型描述：每道表格分析题都包含一个可分类的数据表格，考生可根据需要对表格进行重新排序，以此找出和问题相关的信息和数据，并解答问题。此题型考查考生发现数据、组织数据并由此得出结论有效解决问题的能力。

例题：
整个表格是巴西农业产品的数据

Commodity	Production, world share (%)	Production, world rank	Exports, world share (%)	Exports, world rank
Beef	16	2	22	1
Chickens	15	3	38	1
Coffee	40	1	32	1
Corn	8	4	10	2
Cotton	5	5	10	4
Orange juice	56	1	82	1
Pork	4	4	12	4
Soybeans	27	2	40	2
Sugar	21	1	44	1

For each of the following statements, select *Yes* if the statement can be shown to be true based on the information in the table. Otherwise select *No*.

Yes	No	
○	○	No individual country produces more than one-fourth of the world's sugar.
○	○	If Brazil produces less than 20% of the world's supply of any commodity listed in the table, Brazil is not the world's top exporter of that commodity.
○	○	Of the commodities in the table for which Brazil ranks first in world exports, Brazil produces more than 20% of the world's supply.

3. Two-Part Analysis (二段式分析)

题型描述：题目包含了文本和图表，考生在阅读完文本之后需要从图表中选择出每一栏相对应的正确答案。此题型考查了考生评估两者权衡、解决联立方程以及辨别两者关系的能力。

例题：

The Quasi JX is a new car model. Under ideal driving conditions, the Quasi JX's fuel economy is E kilometers per liter (E$\frac{km}{L}$) when its driving speed is constant at S kilometers per hour (S$\frac{km}{h}$).

In terms of the variables S and E, select the expression that represents the number of liters of fuel used in 1 hour of driving under ideal driving conditions at a constant speed S, and select the expression that represents the number of liters of fuel used in a 60 km drive under ideal driving conditions at a constant speed S. Make only two selections, one in each column.

Liters of fuel in 1 h	Liters of fuel in 60 km	
○	○	$\frac{S}{E}$
○	○	$\frac{E}{S}$
○	○	$\frac{60}{E}$
○	○	$\frac{60}{S}$
○	○	$\frac{S}{60}$
○	○	$\frac{E}{60}$

4. Multi-Source Reasoning (多源推理)

题型描述：页面左方有两或三个选项卡，其中有不同种类或相同种类的各种信息。页面右方是关于这些信息的一个或多个问题。此题型考查考生从不同数据来源中获取最相关信息数据的能力、结合不同种类的数据解决问题的能力。

例题：

Email #1
Email from **administrator** to *research staff*
January 15, 10:46 a.m.
Yesterday was the deadline for our receipt of completed surveys from doctors who were invited to participate in the Medical Practice Priorities Survey. Did we get enough returns from this original group of invitees to get reliable statistics? Do we need to invite additional participants?

Email #2
Email from ***project coordinator*** in *response to the administrator's January 15, 10:46 a.m. message*
January 15, 11:12 a.m.
Altogether we got exactly 350 actual survey completions. We need at least 700 and were hoping for even more, so we plan to invite a second group to participate. Both the results from this first group and other research indicates that with this type of survey and this type of participants there is about a 40 percent probability that any given invitee will submit the completed survey in the time we'll allow. (Obviously that doesn't mean that if we invited 1,000 we'll necessarily get at least 400, so we need to think in terms of the risks of getting too few returns or exceeding the budget.) All of the participants who submitted their surveys by the deadline will get the $50 payment we promised. What is our total budget for compensation to participants?

Email #3
Email from ***administrator*** to *project coordinator in response to the project coordinator's January 15, 11:12 a.m. message*
January 15, 1:54 p.m.
The budget we allocated for compensation to those who complete and submit the Medical Practice Priorities Survey is $45,000. We will honor our commitment to pay $50 to each participant---in the second group as well as the first---who completes the survey and submits it by the deadline we specify when we invite them to participate. However, we will need to try not to exceed the total amount that is budgeted for this purpose.

Consider each of the following statements. Does the information in the three emails support the inference as stated?

Yes	No	
○	○	The administrator is unwilling to invite as many participants in the second group as were invited in the first group
○	○	The project coordinator does not expect to be able to meet the goal for numbers of completed surveys received.
○	○	The administrator is willing to accept some risk of exceeding the budget for compensating participants.

四．IR 问题类型及考察能力

1. Apply: apply concepts presented in the information

- Decide whether new examples would comply with or violate rules established in the information provided
- Determine how a trend present in the information provided would be affected by ne scenarios
- Use principles established in the information provided to draw conclusions about new data

2. Evaluate: evaluate information qualitatively

- Decide whether a claim made in one source is supported or undermined by information provided in another source
- Determine whether the information provided in sufficient to justify a course of action
- Judge the strength of evidence offered in support of an argument or plan
- Identify errors or gaps in the information provided

3. Infer: draw inferences from the information

- Calculate the probability of an outcome on the basis of given data
- Indicate whether statements follow logically from the information provided
- Determine the meaning of a term within the context in which it is used
- Identify the rate of change in data gathered over time

4. Recognize: recognize parts or relationships in the information

- Identify areas of agreement and disagreement between sources of information
- Determine the strength of correlation between two variables
- Indicate which element in a table has a given rank in a combination of categories
- Identify facts provided as evidence in an argument

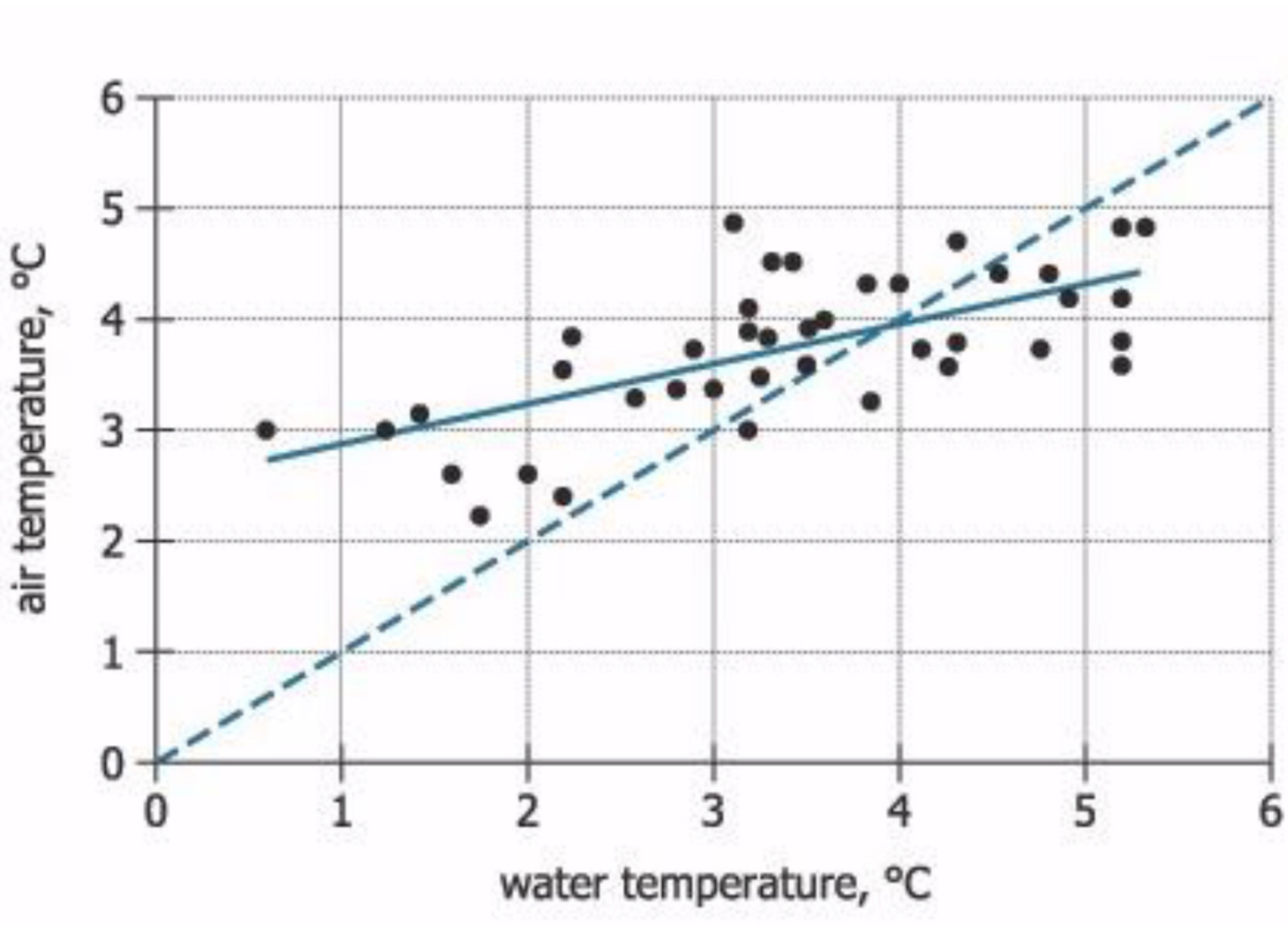
5.Strategize: make strategic decisions or judgments based on the information

- Choose a plan of action that minimizes risks and maximizes value
- Identify tradeoffs required to reach a goal
- Specify the mathematical formula that will yield a desired result
- Determine which means of completing a task are consistent within given constrains

五．例题分析

1. Graphics Interpretation(图形解读)

1.1



The graph at the left is a scatter plot with 40 points, each representing the temperature of the ocean water, measured at a fixed location off the coast of West Iceland, and the air temperature, measured on land at a fixed location in West Iceland. Both the water temperature and the air temperature, in degrees Celsius, were measured at noon on Wednesday of each of 40 consecutive weeks last year. The solid line is the regression line and the dashed line is the line through the points (0,0) and (6,6).

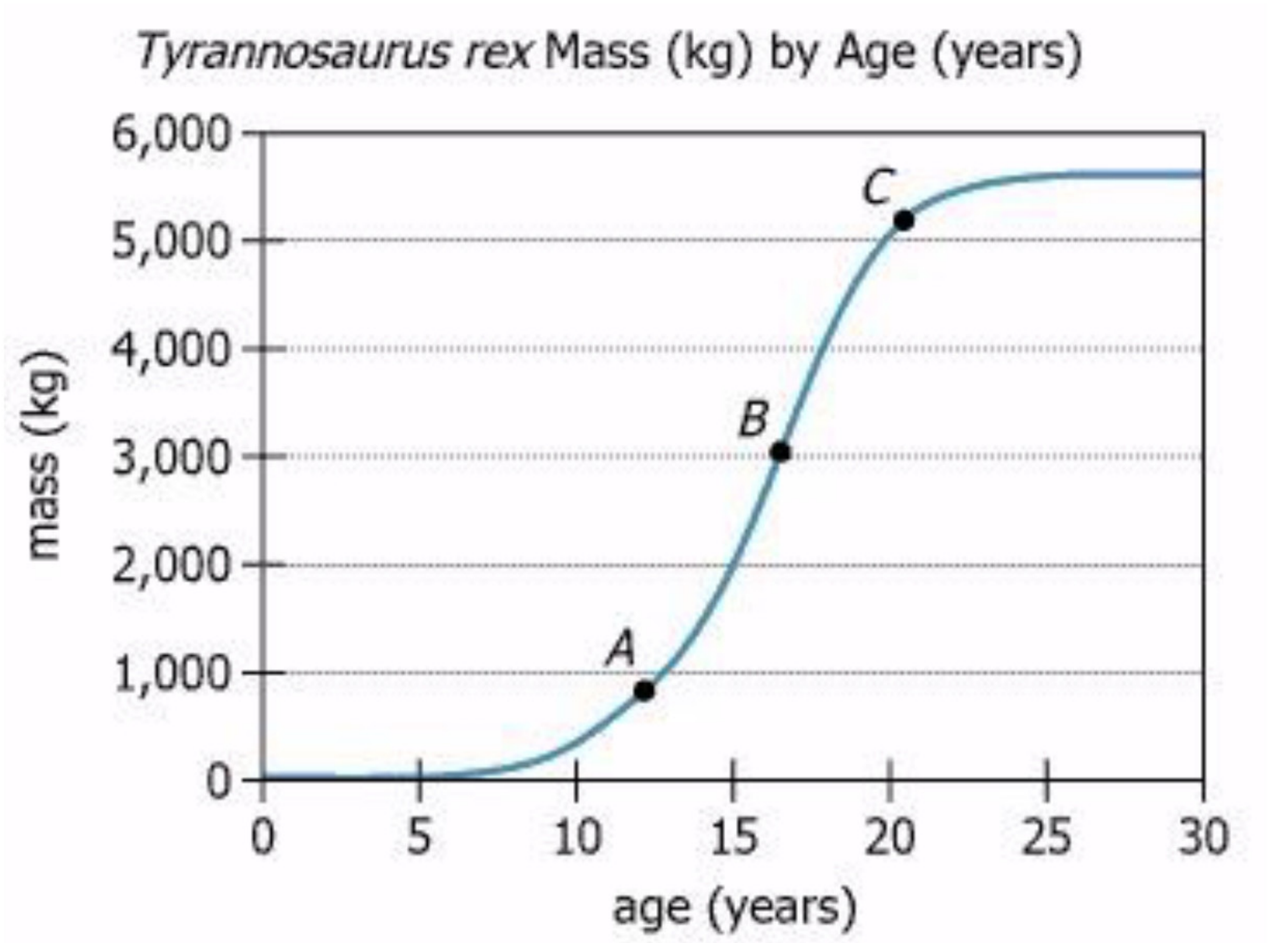
The relationship between the water temperature and the air temperature is _____.

- ○ Positive
- ○ Negative
- ○ Zero

The slope of the regression line is _____ the slope of the dashed line.

- ○ Less than
- ○ Greater than
- ○ Equal to

1.2



The graph models the hypothetical mass, in kilograms, of a Tyrannosaurus*rex* up to 30 years of age. Points A, B, and C represent the masses for a Tyrannosaurus*rex* at ages 12, 16, and 20, respectively, according to the model.

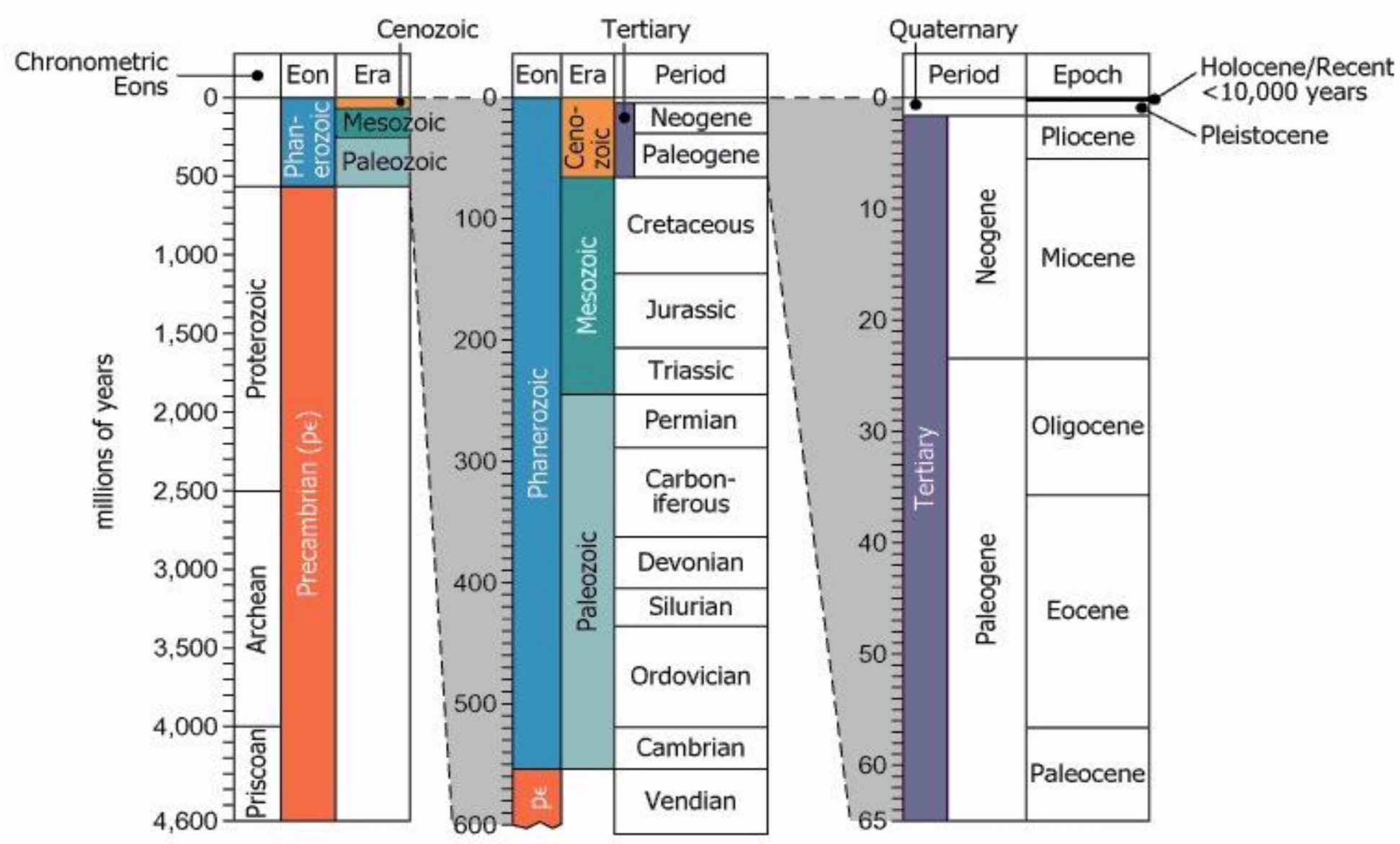
For integer values of the age from 12 to 30, the average (arithmetic mean) mass falls approximately between _____ kilograms.

- ○ 2,000 and 3,000
- ○ 3,000 and 4,000
- ○ 4,000 and 5,000

The percent change in the mass from age 12 to age 16 is approximately ____ the percent change in the mass from age 16 to age 20.

- ○ Equal to
- ○ 2 times
- ○ 3 times

1.3



The diagram shows, in three column groupings, various divisions of Earth's geological history since its formation approximately 4,600 million years ago. In the leftmost column grouping, the Precambrian eon is subdivided into chronometric eons shown on the far left; but otherwise, in the rest of the graphic, each subsequent column to the right shows the subdivisions of the timeframes to its left. Each of the rightmost two column groupings is a magnification—with additional information—of a portion of the grouping directly to its left.

The Miocene epoch spans closest to _____ of the era of which it is a part.

- 3%
- 25%
- 85%

According to the diagram the beginning of the _____ marks the onset of a new eon, era, and period in geological history.

- Cambrian period
- Triassic period
- Pliocene epoch
- Precambrian eon

2. Table Analysis(表格分析)

2.1

Anthropologists collected data about cultural patterns and norms for several small indigenous populations in various countries. The table displays data collected about the economic base; residential patterns (residence); degree of market integration (mean MI)-defined as the percentage of calories obtained in the market place; percentage of population participating in world religions (mean WR); and average community size (mean CS).

Sort By: Population

Population	Location	Economic base	Residence	Mean MI	Mean WR	Mean CS
Au	Papua New Guinea	horticulture, foraging	sedentary	1	100	309
Dolgan/NG	Siberia	hunting, fishing, and wage work	semisedentary	63	59	612
Gusii	Kenya	farming and wage work	sedentary	28	100	4,063
Hadza	Tanzania	foraging	nomadic	0	0	43
Isanga Village	Tanzania	farming and wage work	sedentary	70	99	1,500
Maragoli	Kenya	farming and wage work	sedentary	43	100	3,843
Orma	Kenya	herding livestock	seminomadic	72	100	125
Samburu	Kenya	herding livestock	seminomadic	69	66	2,000
Sanquianga	Colombia	fisheries	sedentary	82	84	1,931
Shuar	Ecuador	horticulture	sedentary	22	76	498
Sursurunga	Papua New Guinea	horticulture	sedentary	24	100	186
Tsimane	Bolivia	horticulture, foraging	seminomadic	7	100	314
Yasawa	Fiji	horticulture, marine foraging	sedentary	21	100	109

For each of the following statements about these indigenous populations selected *Yes* if the statement accurately reflects the data provided in the table. Otherwise, select *No*.

Yes	No	
○	○	The populations that forage have the lowest market integration ratings.
○	○	Each of the populations that depend on both farming and wage work is sedentary and has a mean community size among the five largest.
○	○	The range for market integration is less than the range for participation in world religions.

2.2

The table displays nutrition data per 240 mL serving for selected cooked or uncooked vegetables: percent water, energy in kilocalories (kcal), protein, total fat, carbohydrate, and total fiber, in grams (g). Each serving consists of 240 mL of finitely chopped, raw vegetables (uncooked) or 240 mL of thoroughly drained, steamed vegetables (cooked).

Sort By: Vegetable

Vegetable	Cooked (yes/no)	Percent water	Energy (kcal)	Protein (g)	Total fat (g)	Carbohydrate (g)	Total fiber (g)
Asparagus	yes	92	43	5	1	8	2.9
Beets	yes	87	75	3	trace	17	3.4
Broccoli	yes	91	44	5	1	8	4.5
Broccoli	no	91	25	3	trace	5	2.6
Carrots	yes	87	70	2	trace	16	5.1
Carrots	no	88	47	1	trace	11	3.3
Corn	yes	77	131	5	1	32	3.9
Green beans	yes	89	44	2	trace	10	4.0
Mustard greens	yes	94	21	3	trace	3	2.8
Pak choi	yes	96	20	3	trace	3	2.7
Spinach	yes	91	41	5	trace	7	4.3
Spinach	no	92	7	1	trace	1	0.8
Summer squash	yes	94	36	2	1	8	2.5
Summer squash	no	94	23	1	trace	5	2.1
Sweet green pepper	no	92	40	1	trace	10	2.7

For each of the following statements, selected *Yes* if the statement is true based on the information provided; Otherwise, select *No*.

Yes	No	
○	○	The median amount of protein for all uncooked vegetables listed is $\frac{1}{3}$ the median amount of protein for all cooked vegetables listed.
○	○	The amount of carbohydrate per serving of cooked corn is exactly 3 times the median amount of carbohydrate per serving for the other 14 vegetable options listed.
○	○	Each serving listed for which total fiber is less than 3.0 g also has at most 10 g of carbohydrate.

2.3

The table displays data on *Brazilian agricultural* products in 2009.

Commodity	Production, world share (%)	Production, world rank	Exports, world share (%)	Exports, world rank
Beef	16	2	22	1
Chickens	15	3	38	1
Coffee	40	1	32	1
Corn	8	4	10	2
Cotton	5	5	10	4
Orange juice	56	1	82	1
Pork	4	4	12	4
Soybeans	27	2	40	2
Sugar	21	1	44	1

For each of the following statements, select *Yes* if the statement can be shown to be true based on the information in the table. Otherwise select *No*.

Yes	No	
○	○	No individual country produces more than one-fourth of the world's sugar.
○	○	If Brazil produces less than 20% of the world's supply of any commodity listed in the table, Brazil is not the world's top exporter of that commodity.
○	○	Of the commodities in the table for which Brazil ranks first in world exports, Brazil produces more than 20% of the world's supply.

2.4

Percentage of Population Visiting Selected Cultural Institutions, Single Year

Country/ political union	Public library	Zoo/ aquarium	Natural history museum	Science/ technology museum
Russia	15	8	5	2
Brazil	25	28	7	4
European Union	35	27	20	18
South Korea	35	37	30	10
China	41	51	13	19
Japan	48	45	20	12
US	65	48	27	26

For each of the following statements select *Would help explain* if it would, if true, help explain some of the information in the table. Otherwise select *Would not help explain*.

Would help explain	Would not help explain	
○	○	The proportion of the population of Brazil that lives within close proximity to at least one museum is larger than that of Russia.
○	○	Of the countries/political unions in the table, Russia has the fewest natural history museums per capita.
○	○	Of the countries/political unions in the table, the three that spend the most money to promote their natural history museums are also those in which science is most highly valued.

3. Two-part Analysis (二段式分析)

3.1

A city is hosting a table tennis tournament for its residents. Each team has exactly two players, and each player is on exactly one team. In each round, each team plays exactly one other team and either wins or loses. The winning team advances to the next round and the losing team is eliminated. No team or player drops out except by losing a game. The tournament is in progress, and exactly 512 players participated in the first round.

From the available options, select a number of tournament rounds and a number of teams such that after the specified number of rounds there will be the specified number of teams remaining in the tournament. Make only two sections, one in each column.

	Rounds completed	Teams remaining	
A	○	○	2
B	○	○	4
C	○	○	8
D	○	○	16
E	○	○	32

3.2

Over a period of 5 academic years from Fall 1999 through Spring 2004, the number of faculty at a certain college increased despite a decrease in student enrollment from 5,500 students in Fall 1999.

In the given expressions, F and S represent the percent change in the number of faculty and students, respectively, over the 5 academic years, and R represents the number of students per faculty member in Fall 1999. The percent change in a quantity X is calculated using the formula $(\frac{X_{\text{new}} - X_{old}}{X_{old}})(100)$.

Select the expression that represents the number of faculty in Fall 1999, and select the expression that represents the number of students per faculty member in Spring 2004. Make only two selections, one in each column.

Number of faculty in Fall 1999	Students per faculty member in Spring 2004	
○	○	$5{,}500\ R$
○	○	$\frac{5{,}500}{R}$
○	○	$\frac{1}{R}$
○	○	$\left(\frac{100 + S}{100 + F}\right)R$
○	○	$\left(\frac{100 - S}{100 + F}\right)R$
○	○	$\left(\frac{100 + F}{100 - S}\right)R$

3.3

Organization A currently has 1,050 members. Organization B currently has 1,550 members. The number of members of Organization A and the number of members of Organization B are increasing annually, each at its own constant rate. Analysts project that if each of these organizations maintains its constant annual rate of membership increase, five years from now they will for the first time have the same number of members, and in subsequent years Organization A will have more members than Organization B.

In the table below, identify a rate of increase, in members per year, for Organization A and a rate of increase, in members per year, for Organization B that together are consistent with the analysts' projection. Make only one selection in each column.

Organization A	Organization B	Rate of increase (members per year)
○	○	10
○	○	30
○	○	40
○	○	120
○	○	130
○	○	150

3.4

Rock varnish is typically rich in iron and manganese, with the presence of manages due to bacteria on the surface of the rock. Because the bacteria would not survive on the surface of rocks in the colder, continuously frozen, reaches of Antarctica, scientists were not surprised to discover that rock varnish in the Thiel Mountains area of Antarctica consists only of limonite, a form of oxidized iron. This is had penetrated from the surfaces of the rocks into the cracks. However, although moisture is essential to the movement of limonite, snow has not melted in the Thiel Mountains in recent times.

Indicate which statement in the table the given information most strongly suggests is *true*, and the statement that the given information most strongly suggests is *false*. Make only two selections, on in each column.

	True	False	
A	○	○	Moisture is required for the presence of significant amounts of manganese in the environment.
B	○	○	Moisture is not required for the presence of significant amounts of manganese in the environment.
C	○	○	When temperatures in a continuously frozen location increase to above freezing cracks in rocks there begin to take in rock varnish containing significant amounts of manganese
D	○	○	Rock varnish that is especially rich in iron is mostly found in extreme cold.
E	○	○	Manganese is unable to penetrate into cracks in significant amounts.
F	○	○	Temperatures on rocks in the Thiel Mountains were above freezing at some point in the past.

3.5

The following excerpt from a fictitious science news report discusses a fictitious type of location called a *morefa*.

For zoologists studying the behavior of certain species of birds, the critical importance of observing the birds in those species' morefa during the annual breeding season is obvious. Such observation allows researchers to study not only the courtship displays of many different individuals within a species, but also the species' social hierarchy. Moreover, since some species repeatedly return to the same morefa, researchers can study changes in group dynamics from year to year. The value of observing a morefa when the birds are not present, however---such as prior to their arrival or after they have abandoned the area to establish their nests---is only now becoming apparent.

Based on the definition of the imaginary word *morefa* that can be inferred from the previous paragraph, which of the following activities of a bird species must happen in a location for that location to be the species' morefa, and which must NOT happen in a location for that location to be the species' morefa? Make only two selections, one in each column.

Must happen in the location	Must not happen in the location	Activities of the members of the species
○	○	Sleeping
○	○	Occupying the location multiple times
○	○	Establishing nests
○	○	Gathering together with members of their own species
○	○	Territorial competition with members of different species

3.6

A literature department at a small university in an English-speaking country is organizing a two-day festival in which it will highlight the works of ten writers who have been the subjects of recent scholarly work by the faculty. Five writers will be featured each day. To reflect the department's strengths, the majority of writers scheduled for one of the days will be writers whose primary writing language is not English. On the other day of the festival, at least four of the writers will be women. Neither day should have more than two writers from the same country. Departmental members have already agreed on a schedule for eight of the writers. That schedule showing names, along with each writer's primary writing language and country of origin, is shown.

Day 1:
Achebe (male, English, Nigeria)
Weil (female, French, France)
Gavalda(female, French, France)
Barrett Browning (female, English, UK)

Day 2:
Rowling (female, English, UK)
Austen (female, English, UK)
Ocantos (male, Spanish, Argentina)
Lu Xun (male, Chinese, China)

Select a writer who could be added to the schedule for either day. Then select a writer who could be added to the schedule for neither day. Make only two selections, one in each column.

Either day	Neither day	Writer
○	○	LeGuin (female, English, USA)
○	○	Longfellow (male, English, USA)
○	○	Murasaki (female, Japanese, Japan)
○	○	Colette (female, French, France)
○	○	Vargas Llosa (male, Spanish, Peru)
○	○	Zola (male, French, France)

4. Multi-source Reasoning(多源推理)

4.1

Email #1

Email from **administrator** to *research staff*

January 15, 10:46 a.m.

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Email #2

Email from ***project coordinator*** in *response to the administrator's January 15, 10:46 a.m. message*

January 15, 11:12 a.m.

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Email #3

Email from ***administrator*** to *project coordinator in response to the project coordinator's January 15, 11:12 a.m. message*

January 15, 1:54 p.m.

The budget we allocated for compensation to those who complete and submit the Medical Practice Priorities Survey is $45,000. We will honor our commitment to pay $50 to each participant---in the second group as well as the first---who completes the survey and submits it by the deadline we specify when we invite them to participate. However, we will need to try not to exceed the total amount that is budgeted for this purpose.

Consider each of the following statements. Does the information in the three emails support the inference as stated?

Yes	No	
○	○	The administrator is unwilling to invite as many participants in the second group as were invited in the first group
○	○	The project coordinator does not expect to be able to meet the goal for numbers of completed surveys received.
○	○	The administrator is willing to accept some risk of exceeding the budget for compensating participants.

4.2

Techniques:

Island Museum analyzes historical artifacts using one or more techniques described below—all but one of which is performed by an outside laboratory—to obtain specific information about an object's creation. For each type of material listed, the museum uses only the technique described:

Animal teeth or bones: The museum performs *isotope ratio mass spectrometry*(IRMS) in-house to determine the ratios of chemical elements present, yielding clues as to the animal's diet and the minerals in its water supply.

Metallic ores or alloys: *Inductively coupled plasma mass spectrometry*(ICP-MS) is used to determine the ratios of traces of metallic isotopes present, which differ according to where the sample was obtained.

Plant matter: While they are living, plants absorb carbon-14, which decays at a predictable rate after death; thus *radiocarbon dating* is used to estimate a plant's date of death.

Fired-clay objects: *Thermoluminescence*(TL) dating is used to provide an estimate of the time since clay was fired to create the object.

Artifacts:

Island Museum has acquired a collection of metal, fired clay, stone, bone, and wooden artifacts found on the Kaxna Islands, and presumed to be from the Kaxna Kingdom of 1250–850 BC. Researchers have mapped all the mines, quarries, and sources of clay on Kaxna and know that wooden artifacts of that time were generally created within 2 years after tree harvest. There is, however, considerable uncertainty as to whether these artifacts were actually created on Kaxna.

In analyzing these artifacts, the museum assumes that radiocarbon dating is accurate to approximately ±200 years and TL dating is accurate to approximately ±100 years.

Budget:

For outside laboratory tests, the museum's first-year budget for the Kaxna collection allows unlimited IRMS testing, and a total of $7,000—equal to the cost of 4 TL tests plus 15 radiocarbon tests, or the cost of 40 ICP-MS tests—for all other tests. For each technique applied by an outside lab, the museum is charged a fixed price per artifact.

For each of the following artifacts in the museum's Kaxna collection, select *Yes* if, based on the museum's assumptions, a range of dates for the object's creation can be obtained using one of the techniques in the manner described. Otherwise, select *No*.

Yes	No	
○	○	Bronze statue of a deer
○	○	Fired-clay pot
○	○	Wooden statue of a warrior

For each of the following combinations of Kaxna artifacts, select *Yes* if, based on the information provided, the cost of all pertinent techniques described can be shown to be within the museum's first-year Kaxna budget. Otherwise, select *No*.

Yes	No	
○	○	2 fired-clay statues and 10 bronze statues
○	○	3 fired-clay statues and 5 tin implements
○	○	4 fired-clay pots and 20 wooden statues

For each of the following combinations of Kaxna artifacts, select *Yes* if, based on the information provided, the cost of all pertinent techniques described can be shown to be within the museum's first-year Kaxna budget. Otherwise, select *No*.

Yes	No	
○	○	2 bone implements and 5 fired-clay cupsdecorated with gold
○	○	7 wooden statues and 20 metal implements
○	○	15 wooden statues decorated with bone

Among the Kaxna artifacts is a wooden box containing both a small fired-clay bead and some river sediment containing clay and plant matter. Based on the museum's assumptions, which one of the following details about the bead can be determined by applying one of the tests in the manner described?

- ○ A range of dates for its manufacture
- ○ The Kaxna island on which it was made
- ○ Vegetation patterns near the workshop where it was made
- ○ A range of dates for its placement in the box
- ○ The source of clay used to make the bead

Which one of the following pieces of information would, on its own, provide the strongest evidence that the given artifact was actually produced on Kaxna?

- ○ A radiocarbon date of 1050 BC for a wooden bowl
- ○ IRMS analysis of a necklace made from animal bones and teeth
- ○ A TL date for a fired-clay brick that places it definitively in the period of the Kaxna Kingdom
- ○ ICP-MS analysis of a metal tool that reveals element ratios unique to a mine on Kaxna
- ○ Determination that a stone statue was found near a quarry known to produce stone statues during the Kaxna Kingdom