

Part 1: Math & Logic (40%)

1. $x - 5x + 4 + x - 6 = x + 3x - 7$.

Given that the above equation is true, what is the value of x ?

- | | |
|-----------|-----------|
| a. $-7/5$ | c. $-5/7$ |
| b. $7/5$ | d. $5/7$ |

2. Tselmuun wants to buy tickets for a symphony concert that is sold out. She finds some from a ticket reseller, who will charge her a service fee. The equation $y = 210x + 23$ represents the total amount, y , that Tselmuun will have to pay to buy x tickets. What does 210 mean?

- a. The amount of the service fee being charged
- b. The price of a single ticket
- c. The total amount Tselmuun will pay if she buys just one ticket.
- d. The total amount Tselmuun will pay for any number of tickets she chooses to buy

3. Baatar walks 25 meters in 12.6 seconds. If he walks at the same pace continually, which of these is approximately his distance covered in 5 minutes?

- | | |
|----------------|---------------|
| a. 100 meters | c. 505 meters |
| b. 1000 meters | d. 595 meters |

4. A steel company uses metric tons and short tons to weigh its products. A short ton weighs approximately 9% less than a metric ton. If one steel shipment weighs 55 short tons, what is the weight of that shipment in metric tons?

- | | |
|----------------------|----------------------|
| a. 52.75 metric tons | c. 58.85 metric tons |
| b. 45.05 metric tons | d. 50.05 metric tons |

5. The manager of a grocery store assigns all part-time hours to various store functions. In one month, 45% of part-time hours were allocated to restocking, 25% of part-time hours were allocated to maintenance, and 20% of part-time hours were assigned to receiving. The manager assigned the remaining 20 hours for general store work. In that month, how many more hours were assigned to restocking than to maintenance?

- | | |
|-------|-------|
| a. 20 | c. 45 |
| b. 50 | d. 40 |

6. The product of two numbers is 29,282. One of the numbers is 100% larger than the other number. What is the sum of the numbers?

- | | |
|--------|--------|
| a. 99 | c. 726 |
| b. 181 | d. 363 |

7. Three coins are tossed at the same time. What is the probability that exactly 3 heads are face up?

- | | |
|----------|----------|
| a. $1/4$ | c. $3/8$ |
| b. $1/8$ | d. $1/2$ |

8. A jar contains 10 blue, 8 green, and 6 red marbles. Every time a marble is removed from the jar, it is not replaced. What is the probability, to the nearest hundredth, that the second marble chosen is green if the first marble chosen is blue?

- | | |
|---------|---------|
| a. 0.35 | c. 0.30 |
| b. 0.33 | d. 0.34 |

9. $X = \{-4, -2, 1, 3\}$ $Y = \{-1, 4, 5\}$. If x is a number from set X , and y is a number from set Y , the probability that $x + y$ is negative is closest to

- a. 0.1
- b. 0.3

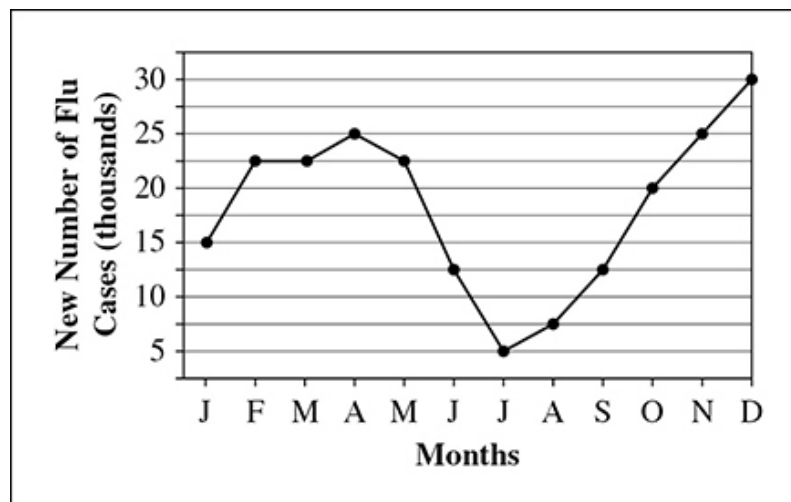
- c. 0.5
- d. 0.2

Answer	Percent
Strawberry	34.2%
Vanilla	15.1%
Other	40.2%
I don't eat ice cream	10.5%

10. The table above shows the data collected when students at a local school were questioned about their favorite ice cream flavor. Based on this information, what is the approximate probability that a student answered Strawberry, given that he or she did not say "I don't eat ice cream"?

- a. 0.382
- b. 0.105
- c. 0.342
- d. 0.169

11. According to the graph, between which two months was there the biggest change in the number of new cases of the flu?



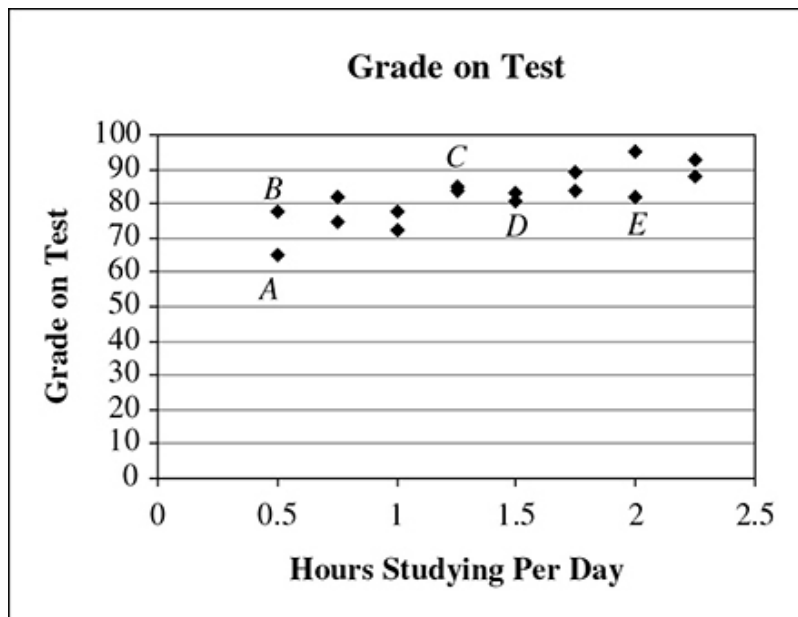
- a. February and March
- b. September and October
- c. May and June
- d. August and September

12. The bar graph below displays the data gathered when individuals were polled about their favorite type of movie. Each person polled chose one movie type. By how many percent is the most favorite movie type

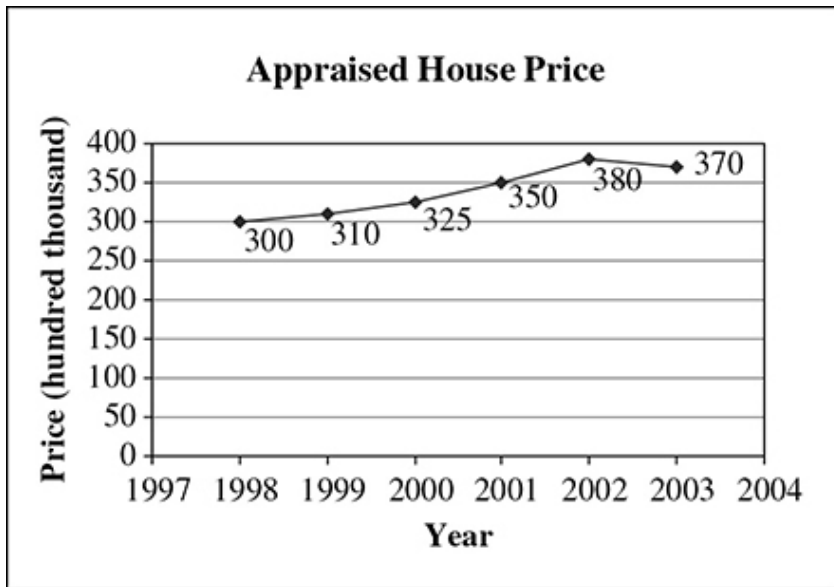
Movie Styles

Movie Type	Number of Respondents
Comedy	20
Suspense	30
Action	25
Horror	15
Drama	40
Other	20

13. The scatterplot below shows a student's grade on a test against the number of hours that student spent studying each night. Which point on the graph has the lowest grade-to-hours studying ratio?



14. The appraised price of a house is shown in the line graph below. What is the average increase in price of houses from 1998 to 2003?



- a. \$10,000
b. \$14,000

- c. \$15,000
d. \$25,000

15. A bakery owner decides to increase the bakery's cookie offerings. Starting with 12 types of cookies, the bakery will add 2 new offerings each week for the next 10 weeks. The total number of offerings is represented by c , and the number of weeks is represented by w . If the equation $c = mw + b$ represents the relationship, which variable should be replaced with the number 2?

- a. c
b. w

- c. m
d. b

16. $(4X^3 - 6) - (5X^3 + X + 6)$

Which of the following is equivalent to the expression above?

- a. $-X^3 - X - 12$
b. $-X^3 + X - 12$

- c. $-9X^3 + X - 12$
d. $9X^3 + X + 12$

17. The trash haulers charge \$7 for each container of trash and \$1 for each container of recycling. There were a total of 15 containers of trash and recycling. The total charge before taxes for this entire collection was \$69. How many containers of trash were in this collection?

- a. 4.5
b. 6

- c. 9
d. 54

18. Construction on a high-rise building doubled the number of its total floors each year until after six years there were a total of 192 floors. How many floors were built during the fourth year?

- a. 6
b. 48

- c. 12
d. 24

19. What are the solutions to the quadratic equation seen below?

$$3x^2 - 18x + 24 = 0$$

- a. $x = -4$ and $x = 2$
b. $x = -4$ and $x = -2$

- c. $x = 4$ and $x = 2$
d. $x = 4$ and $x = -2$

20. In the inequality $5r - 3 \leq 1$, what is the greatest possible value of $5r + 2$?

- a. 3
- b. 4
- c. 5
- d. 6

21. The number of students in an elementary class, S , decided to spend D dollars for a present for their favorite teacher, Mrs. Konopka. Each student was to contribute an equal amount. Because 20 students refused to contribute, each of those remaining agreed to contribute an additional, equal amount. What was the additional amount each had to contribute, in dollars?

- a. $(S^2 - 20) / D$
- b. $D / (S - 20)$
- c. $20D / (S^2 - 20S)$
- d. $(S^2 - 20S) / 20D$

22. If $(x + n)^2 = x^2 + 21x + n^2$, what is the value of n^2 ?

- a. 441
- b. 441/4
- c. 441/2
- d. 38

23. The chart below represents the students who are members of a high school's swim and water polo teams. The water polo and swim teams are having a Spring Banquet. One of the team members will be chosen as athlete of the year. What is the probability the person chosen will be a member of the water polo team or a girl?

	Boy	Girl	Total
Swim	12	14	26
Water Polo	16	15	31
Total	28	29	57

- a. 31/57
- b. 43/57
- c. 52/57
- d. 45/57

24. There is a 30% chance of rain on Thursday. If it does not rain, a high school baseball team has a 80% chance that it will play its scheduled game. What is the probability that there will not be any rain on Thursday but the game will not be played?

- a. 14%
- b. 18%
- c. 28%
- d. 42%

25. The sum of three numbers is 840. One of the numbers, n , is 50% more than the sum of the other two numbers. What is the value of n ?

- a. 144
- b. 336
- c. 504
- d. 468

Part 2: English Proficiency (30%)

Reading Passage 1

The Great Barrier Reef

Located off the northeastern coast of Australia, the Great Barrier Reef is the largest coral reef system in the world. Stretching over 2,300 kilometers, it is made up of more than 2,900 individual reefs and 900 islands. The reef is so large that it can be seen from space and is considered one of the seven natural wonders of the world.

The Great Barrier Reef is home to an incredible variety of marine life, including over 1,500 species of fish, 400 types of coral, and dozens of species of sharks, rays, and sea turtles. This biodiversity makes the reef a vital part of the ocean's ecosystem. Many species rely on the reef for food, shelter, and breeding grounds.

In addition to its ecological importance, the Great Barrier Reef is also significant to the economy and culture of Australia. It supports thousands of jobs in tourism, fishing, and research. Visitors from all over the world come to dive, snorkel, and experience its vibrant underwater world. For Indigenous Australian groups, the reef holds deep cultural and spiritual meaning, with connections going back thousands of years.

However, the reef faces serious challenges today. Rising sea temperatures caused by climate change have led to coral bleaching—a process where corals lose their color and become more vulnerable to disease. Pollution from agriculture and coastal development also threatens the reef's health.

Efforts are being made to protect the Great Barrier Reef through scientific research, government policies, and conservation projects. These include limiting harmful fishing practices, reducing pollution, and creating marine protected areas. Scientists are also studying ways to help coral adapt to changing conditions.

The future of the Great Barrier Reef depends on global action and local responsibility. Its survival is a reminder of how closely the natural world is connected to human life and decisions.

26. What is the article about?

- A) The history of Australia's coastline
- B) A look at the Great Barrier Reef's value and threats
- C) The impact of fishing laws in Australia
- D) How coral reefs are formed over time

27. Which of the following statements is true?

- A) Rising sea temperatures affect the health of the reef.
- B) The reef is no longer a popular tourist destination.
- C) Coral bleaching is caused only by pollution.
- D) Indigenous Australians avoid the reef due to safety reasons.

28. What is significant about the reef's biodiversity?

- A) It only includes coral and fish.
- B) It plays a small role in ocean life.
- C) Many marine species rely on it for survival.
- D) It was created entirely by human effort.

29. What does the word 'vulnerable' mean in paragraph 4, line 2?

- A) Strong and full of energy
- B) Likely to be harmed or affected
- C) Hidden from sight
- D) Unable to grow further

30. What is the significance of the reef to Indigenous Australians?

- A) It is mainly used for scientific experiments
- B) It has deep cultural and spiritual meaning
- C) It helps them learn foreign languages
- D) It is used as a base for building new towns

31. What evidence supports the idea that the reef is important to the economy?

- A) It has more coral than any other reef
- B) It can be seen from outer space
- C) It grows quickly every year
- D) It supports jobs in tourism and fishing

32. It can be inferred from the article that a major threat to the reef's future is _____.

- A) the use of submarines in the area
- B) natural aging of coral reefs
- C) human activities and climate change
- D) lack of interest from tourists

33. In modern times, what is the main global importance of the Great Barrier Reef?

- A) It helps scientists explore space
- B) It is the main location for coral sales
- C) It serves as a border between countries
- D) It supports ocean life and reminds us of environmental responsibility

Reading Passage 2

Mount Everest: The World's Highest Peak

Mount Everest, rising 8,848 meters above sea level, is the highest mountain in the world. It is located in the Himalayas, on the border between Nepal and the Tibet Autonomous Region of China. Known as "Sagarmatha" in Nepali and "Chomolungma" in Tibetan, Everest has long been a symbol of adventure and challenge.

The mountain was first successfully climbed in 1953 by Sir Edmund Hillary of New Zealand and Tenzing Norgay, a Sherpa of Nepal. Since then, thousands of climbers have attempted the ascent, drawn by the mountain's majesty and the desire to reach the highest point on Earth. However, Everest is not an easy climb. Harsh weather, low oxygen levels, and dangerous terrain make it one of the most difficult and risky expeditions in the world.

Climbers must be physically fit, mentally strong, and well-prepared. Most expeditions require weeks of training and acclimatization to adjust to the thin air. Even with oxygen tanks and expert guides, the "death zone"—areas above 8,000 meters—remains extremely hazardous. Despite the risks, climbers continue to be inspired by the chance to stand on top of the world.

The mountain also holds great cultural and spiritual value for the people living nearby. For many Sherpas and Tibetan Buddhists, Everest is considered sacred, and climbing it requires respect for the natural world and local traditions. Recently, concerns have been raised about overcrowding, waste, and environmental damage caused by the increasing number of climbers.

Efforts are now being made to protect the mountain. Governments, local communities, and environmental groups are working together to create sustainable climbing practices, reduce pollution, and preserve Everest's unique environment for future generations.

34. What is one of the greatest dangers climbers face on Mount Everest?

- A) Low oxygen levels in high altitudes
- B) Sudden animal attacks
- C) Getting lost in the nearby forests
- D) Intense heat from the sun

35. Why is Mount Everest considered difficult to climb?

- A) The mountain is full of plant life
- B) It has dangerous weather and thin air
- C) It has many helpful rest areas
- D) It is too far from any cities

36. Which of the following is true about Mount Everest?

- A) It was first climbed in the 1800s
- B) It can only be climbed from China
- C) It lies on the border between Nepal and Tibet

D) It is the smallest peak in the Himalayas

37. What does the word "acclimatization" most likely mean in paragraph 3?

- A) A way to celebrate after reaching the summit
- B) A method for packing food and gear
- C) Getting tired from too much climbing
- D) The process of adjusting to a new environment

38. What is the main purpose of the passage?

- A) To explain the dangers of all Himalayan mountains
- B) To compare different climbing equipment
- C) To describe Mount Everest and the efforts to protect it
- D) To teach readers how to climb Everest quickly

39. What does Mount Everest represent for many climbers?

- A) A place to farm and settle
- B) A symbol of adventure and achievement
- C) A religious site for tourists
- D) A good spot for camping only

Reading Passage 3

Volcanoes: Nature's Powerful Forces

Volcanoes are openings in the Earth's crust where molten rock, gas, and ash can escape to the surface. These powerful natural features can be found all over the world, especially along the edges of tectonic plates. Some volcanoes erupt violently, shooting lava and ash into the air, while others release gases and magma slowly over time.

The molten rock beneath Earth's surface is called magma. When it erupts and flows out, it is known as lava. Over time, layers of lava and ash can build up to form volcanic mountains. Volcanoes are classified into three main types: active, dormant, and extinct. Active volcanoes erupt regularly, dormant ones haven't erupted in a long time but could again, and extinct volcanoes are not expected to erupt in the future.

Volcanic eruptions can be destructive, damaging homes, land, and ecosystems. However, they also have benefits. Volcanic soil is often very rich and good for farming. In some areas, geothermal energy from volcanoes is used to produce electricity. Many tourists are drawn to volcanic regions because of their unique landscapes and natural beauty.

Scientists called volcanologists study volcanoes to understand their behavior and to help predict future eruptions. Although it is still difficult to know exactly when a volcano will erupt, monitoring temperature changes, gas emissions, and ground movement helps scientists provide early warnings to nearby communities.

Volcanoes remind us of Earth's dynamic nature and the incredible power that lies beneath our feet.

40. What is one reason people are attracted to volcanic regions?

- A) The guarantee of safety from eruptions
- B) The lack of farming opportunities
- C) The ability to live inside volcanic craters
- D) The dramatic scenery and natural beauty

41. What is magma called when it reaches the Earth's surface?

- A) Ash
- B) Lava
- C) Sediment

D) Basalt

42. Which of the following best defines a dormant volcano?

- A) One that has completely disappeared
- B) One that hasn't erupted in a long time but may erupt again
- C) One that erupts every month
- D) One that only releases gases

43. What is the main idea of the passage?

- A) Volcanoes are only dangerous and should be avoided
- B) Lava is the most important part of a volcano
- C) Volcanoes are powerful natural features that can be both dangerous and beneficial
- D) Volcanoes are easy to predict and prevent

44. How do scientists help communities near volcanoes?

- A) By keeping people away from all volcanic regions
- B) By monitoring volcanoes and giving early warnings of eruptions
- C) By building houses on volcano slopes
- D) By stopping volcanoes from forming

45. According to the passage, one benefit of volcanoes is:

- A) Volcanic soil can be good for farming
- B) Lava is cool and easy to walk on
- C) Volcanoes create easy transportation routes
- D) Volcanic eruptions are fun to watch

Practical application

For the following exercise, choose the most appropriate option to complete the passage.

46. As electric vehicles become more common, manufacturers are working to improve battery life to make them more _____ for long-distance travel.

- A) predictable
- B) decorative
- C) practical
- D) occasional

47. The documentary aimed to _____ public interest in climate action by showing the real-life effects of rising temperatures on coastal communities.

- A) spark
- B) ignore
- C) prevent
- D) silence

48. While the theory gained popularity on social media, scientists warned that it lacked _____ evidence and should be viewed with skepticism.

- A) credible
- B) automatic
- C) confusing
- D) recent

49. The manager appreciated her team's ability to remain calm and _____ even during high-pressure situations.

- A) impatient
- B) nervous
- C) composed
- D) uncertain

50. As space travel becomes more advanced, engineers must find ways to ensure that spacecraft systems remain _____ throughout long missions.

- A) invisible
- B) functional
- C) temporary
- D) historical

51. Many people believe that creativity is something you are born with, but others argue that it can be _____ through education and practice.

- A) removed
- B) inherited
- C) developed
- D) avoided

52. The rise of digital learning platforms has made it possible for students to access education from anywhere, _____ creating new opportunities in remote areas.

- A) in contrast
- B) for example
- C) however
- D) thereby

For the following exercises choose the correct word to fill in the blank.

53. The teacher's clear explanations and engaging examples greatly improved the students' _____ of the topic.

- A) resistance
- B) confusion
- C) frustration
- D) understanding

54. The athlete's _____ attitude after losing the match showed true sportsmanship and maturity.

- A) arrogant
- B) respectful
- C) disappointed
- D) careless

55. The museum's new exhibit offers a fascinating _____ of ancient cultures through artifacts, artwork, and storytelling.

- A) prediction
- B) exploration
- C) hesitation
- D) limitation

56. The fire department responded quickly and managed to _____ the fire before it spread to nearby buildings.

- A) contain
- B) ignite
- C) dismiss
- D) rebuild

57. Despite facing several setbacks, the team continued to work with _____ toward their goal.

- A) hesitation
- B) regret
- C) determination
- D) boredom

58. The author's writing style is known for its _____, using simple language to express deep and complex ideas.

- A) exaggeration
- B) confusion
- C) repetition
- D) clarity

59. During the trial, the witness provided _____ evidence that helped clarify the sequence of events.

- A) vague
- B) crucial
- C) exaggerated
- D) accidental

60. The CEO praised the employees for their _____ efforts during the busy holiday season.

- A) temporary
- B) scattered
- C) consistent
- D) uncertain

Part 3: Essay Question (30%)

Answer the following question in 250-500 words:

If you had unlimited power how would you change the world and/or yourself?