Mahidol University International College

Mathematics Test

Instructions: ⏳ **Duration: 90 minutes**

- Solve the following problems using any available space on the page for scratch work.
- On your answer sheet, fill in the choice that best corresponds to the correct answer.
- **The use of a calculator is permitted.**

Mathematics Test Topics

Algebra

- Linear equations and linear inequalities
- Linear functions
- Systems of linear equations
- Quadratic equations
- Radicals and rational exponents
- Polynomials
- Functions

Ratios & Percentages

- Ratios, rates, and proportions
- Percents
- Units

Data & Statistics

- Table data
- Scatterplots
- Linear and exponential growth
- Data inferences
- Center, spread, and shape of distributions

Geometry & Trigonometry

- Volume
- Right triangles
- Congruence and similarity
- Angles, arc lengths, and trigonometric functions
- Circle theorems
- Circle equations

Complex Numbers

Mahidol University International College

Mathematics Test – Sample Version

DIRECTIONS: This is a sample mathematics test created for practice purposes. You may complete the test at your own pace and in your own time. The use of a calculator is allowed. This sample test is designed to give you an idea of the format and level of difficulty of the actual MUIC Mathematics Test.

---

1. If July 23, 2022 is Saturday, then August 23, 2022 is

A. Sunday

B. Monday

C. Tuesday

D. Wednesday

E. Friday

2. Ant and Bat are the same height. Kat's height is 161 cm. The average (mean) of the heights of Ant, Bat and Kat is 171 cm. What is Ant's height?

A. 161 cm

B. 166 cm

C. 176 cm

D. 183 cm

E. 191 cm

3. Factor $625 - x^4$.

A. $(25 + x^2)^2$

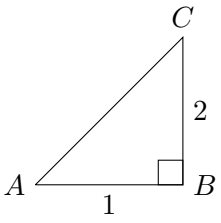
B. $(25 + x^2)(5 - x)(5 + x)$

C. $(25 + x^2)(5 + x)^2$

D. $(25 - x^2)^2$

E. $(5 - x)^2(5 + x)^2$

4. Which of the following is the value of $\sin(\angle CAB)$?



A. $\frac{2}{5}$

B. $\frac{1}{\sqrt{5}}$

C. $\frac{1}{5}$

D. 1

E. $\frac{2}{\sqrt{5}}$

5. The ratio of apples to bananas in a box is $3 : 2$. The total number of apples and bananas in the box cannot be equal to

A. 40

B. 55

C. 175

D. 160

E. 72

6. In the set of real numbers, which of the following is the range of the function

$$f(x) = \begin{cases} -2x, & \text{if } x > 0, \\ x + 3, & \text{if } x \leq 0? \end{cases}$$

A. $\{y \mid y \geq -3\}$

B. $\{y \mid y \leq 3\}$

C. $\{y \mid 0 < y \leq 3\}$

D. $\{y \mid y < 0 \text{ or } y \geq 3\}$

E. all real numbers

7. The restaurant sells 5-inch (in diameter) and 8-inch (in diameter) pizzas. On one of the evenings, the restaurant manager figured out that they ran out of 8-inch pizzas that a customer had ordered. At least how many 5-inch pizzas are needed to replace an 8-inch pizza?

A. 2

B. 3

C. 4

D. 5

E. 6

8. What is the y-intercept of a line that passes through the points $(1, 3)$ and $(-2, -4)$?

A. -1

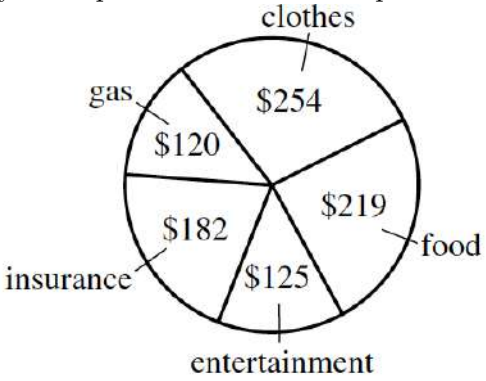
B. -0.66

C. 0

D. 0.5

E. 0.66

9. Last month, Jeff had total expenditures of \$900. The pie chart below breaks down these expenditures by category. The category in which Jeff's expenditures were smallest is approximately what percent of his total expenditures?



A. 9%

B. 11%

C. 13%

D. 15%

E. 17%

10. Ann and Betty go on a 30 km run. They both usually run at 10 km/h. If Ann runs at 0.5 times her usual running speed, and Betty runs at 1.5 times her usual speed, how many more hours does it take Ann to complete the run than it takes Betty to complete the run?

A. 1

B. 2

C. 3

D. 4

E. 6

11. The expression $6 + 2 \cdot 0 - 9$ equals

A. -54

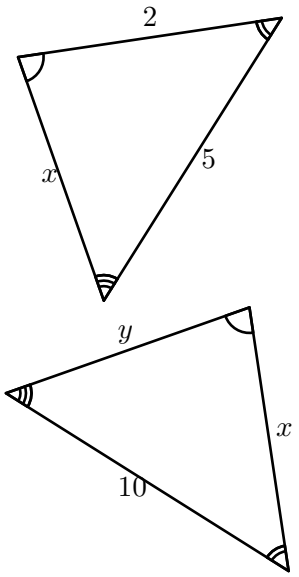
B. -12

C. -9

D. -3

E. 12

12. In the following figure, the two triangles are similar with the lengths of their sides shown and equal angles marked with the same number of arcs. What is the value of y in terms of x?



A. $x - 2$

B. $x - 1$

C. $x + 1$

D. $x + 2$

E. $x + 4$

13. Which of the following expressions is not equivalent to $3x + 6$?

A. $3(x + 2)$

B. $\dfrac{-9x - 18}{-3}$

C. $\dfrac{1}{3}(3x) + \dfrac{2}{3}(9)$

D. $\dfrac{1}{3}(9x + 18)$

E. $3x - 2(-3)$

14. If $(xy^3) \cdot (y^{-1}x^3) = 81$, then the possible value for x^2y is

A. 1

B. 3

C. 9

D. 27

E. 81

15. Find the value of $1 - 2 + 3 - 4 + 5 - 6 + \cdots + 2019 - 2020 + 2021 - 2022$.

A. -1010

B. -1011

C. 1010

D. 1011

E. 1110

16. How many roots larger than 1 does $x^2 - 3x + 2$ have?

A. None

B. One

C. Two

D. Three

E. Cannot be determined

17. If $3\left(\frac{1}{9}\right)^{1-x} = \left(\frac{1}{27}\right)^{x-3}$, then $x =$

A. 0

B. $\frac{13}{5}$

C. 2

D. -2

E. $-\frac{13}{5}$

18. Given the functions $f(x) = x + 6$ and $g(x) = x^2 - 2$, which of the following is the value of $(f \circ g)(3)$

A. 7

B. 9

C. 10

D. 13

E. 79

19. This week, the price of a plane ticket is \$436.00. Over the next three weeks, suppose the price of the ticket rises 5% in the first week, falls 10% the next week, and then rises 20% in the third week. To the nearest cent, what is the cost of the plane ticket in 3 weeks?

A. \$412.02

B. \$457.80

C. \$494.42

D. \$501.40

E. \$523.20

20. Hanna and Jake are hoping to be selected as of this year's talent show. The committee chooses a host by random selection and this year only 29 students entered their names into the drawing. What is the probability either Hanna or Jake is selected as the host this year?

A. $\frac{1}{841}$

B. $\frac{2}{841}$

C. $\frac{1}{58}$

D. $\frac{1}{29}$

E. $\frac{2}{29}$

Use the following information to answer questions 21–22.

A group of 21 students took a statistics exam and their scores are displayed in a stem and leaf plot below.

3	0 0 0 1 1 2 2 2 8 9
4	0 5
5	1
6	1 7 8
7	1 6 9
8	8
9	0

Key: $3|1 \implies 31$

21. What is the median of the statistics scores?

A. 30

B. 39

C. 39.5

D. 40

E. 60

22. What is the difference between the maximum score and the minimum score?

A. 20

B. 30

C. 40

D. 60

E. 90

23. Let i denote the complex number $\sqrt{-1}$. Which of the following is equal to $\dfrac{1-3i}{2-i}$?

A. $1+3i$

B. $\dfrac{-1-5i}{5}$

C. $5-5i$

D. $1+i$

E. None of the above

24. The ordered pairs

$$\{(3,\ 2),\ (1,\ 2),\ (3,\ -1),\ (5,\ 1),\ (4,\ 5)\}$$

represent a relation that is **not** a function. What change would make it a function?

A. Replace $(1,\ 2)$ with $(2,\ 3)$.

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A. $y = 2x - 5$

B. $y = -\frac{1}{2}x - 3$

C. $y = -2x + 5$

D. $y = \frac{1}{2}x + 7$

E. None of the above

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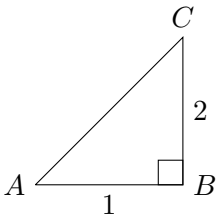

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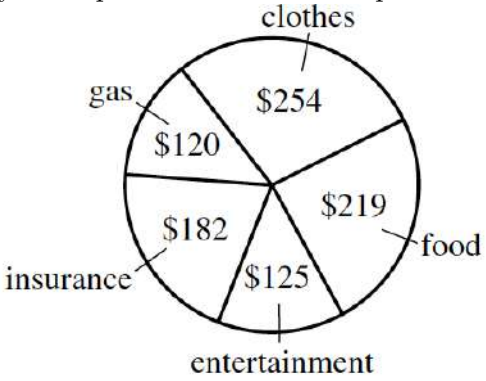

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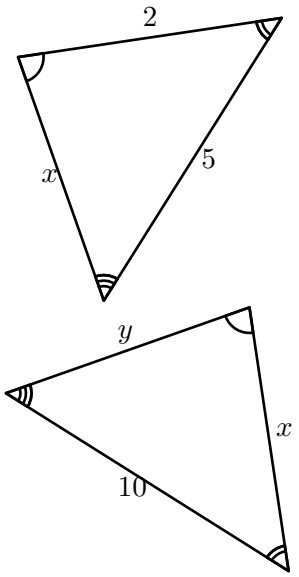

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B. $y = -\frac{1}{2}x - 3$

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D. $y = \frac{1}{2}x + 7$

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Mahidol University International College

Mathematics Test

SAMPLE

DIRECTIONS: Solve the following problems using any available space on the page for scratch-work. On your answer sheet fill in the choice that best corresponds to the correct answer. You may fold any page of the test papers but may NOT separate any page from the test papers themselves. The use of a calculator **is permitted**.

Questions 1 and 2 refer to the following chart:

Burger Sales
for the week of December 10 to 16, 2017

Day	Hamburgers	Cheeseburgers
Sunday	120	92
Monday	85	80
Tuesday	77	70
Wednesday	74	71
Thursday	75	72
Friday	91	88
Saturday	111	112

1. On which day were the most burgers (hamburgers or cheeseburgers) sold?

A. Saturday

B. Monday

C. Thursday

D. Friday

E. Sunday

2. On how many days were more hamburgers sold than cheeseburgers?

A. 7

B. 6

C. 5

D. 4

E. 3

3. If $3x + 17 = 5$, then $2x + 4 =$

A. -4

B. -2

C. 0

D. 2

E. 4

4. Which of the following is a value of x for which $x^2 + x - 6 = 0$?

A. -4

B. -3

C. -2

D. -1

E. 1

5. Allen can mow the lawn in 5 hours, and Betty can mow the lawn in 4 hours. How many hours will it take them to mow the lawn together?

A. 1

B. $2\frac{2}{9}$

C. 4

D. $4\frac{1}{2}$

E. 5

6. If a mixture is 3/7 alcohol by volume and 4/7 water by volume, what is the ratio of the volume of alcohol to the volume of water in this mixture?

A. $\frac{3}{7}$

B. $\frac{4}{7}$

C. $\frac{3}{4}$

D. $\frac{4}{3}$

E. $\frac{7}{4}$

7. If 40% of the students in a class have blue eyes and 20% of those with blue eyes have brown hair, then what percent of the original total number have brown hair and blue eyes?

A. 4%

B. 8%

C. 16%

D. 20%

E. 32%

8. The perimeter of an isosceles triangle ABC is 42. The two equal sides, $\overline{AB}$ and $\overline{AC}$ are each three times as long as the third side. What are the lengths of each side?

A. 21, 21, 21

B. 6, 6, 18

C. 18, 21, 3

D. 18, 18, 6

E. 4, 19, 19

9. In a family of five, the heights of the members are 5 feet 1 inch, 5 feet 7 inches, 5 feet 2 inches, 5 feet, and 4 feet 7 inches. The average height is

A. 4 feet $4\frac{1}{5}$ inches

B. 5 feet

C. 5 feet 1 inch

D. 5 feet 2 inches

E. 5 feet 3 inches

10. In the first year of the U.S. Pinball League, the Baltimore Chargers won 50% of their games. During the second season of the league, the Chargers won 65% of their games. If there were twice as many games played in the second season as in the first, what percentage of the games did the Chargers win in the first two years of the league?

A. 115%

B. 60%

C. 57.5%

D. 55%

E. It cannot be determined from the given information.

11. In a circle with center O. Let A,B be distinct points on the circumference of the circle and the measure of angle $\angle AOB = 80$ degrees. How many degrees are there in angle $\angle ABO$?

A. 40 degrees

B. 50 degrees

C. 60 degrees

D. 70 degrees

E. 80 degrees

12. The average temperatures for five days were $82°, 86°, 91°, 79°$, and $91°$. What is the mode for these temperatures?

A. $79°$

B. $85.8°$

C. $86°$

D. $86.8°$

E. $91°$

13. What percentage of $\frac{2}{3}$ is $\frac{1}{2}$?

A. 300%

B. $133\frac{1}{3}\%$

C. 75%

D. 50%

E. $33\frac{1}{3}\%$

14. If the volume and the total surface area of a cube are equal, then what is the length of one edge of the cube?

A. 2 units

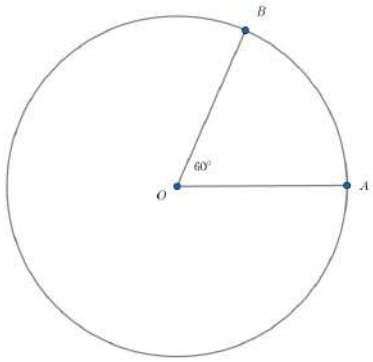
B. 3 units

C. 4 units

D. 5 units

E. 6 units

15.



What is the probability that a dart thrown in the circle with center O above will land in the sector AOB, if the measure of the angle $\angle AOB$ is 60°?

A. $\frac{1}{2}$

B. $\frac{1}{3}$

C. $\frac{1}{4}$

D. $\frac{1}{6}$

E. $\frac{1}{8}$

16. For $x > 0, y > 0$, which of the following is equivalent to the expression

$$\left(\frac{3x^{3/2}y^3}{x^2y^{-1/2}}\right)^{-2}?$$

A. $\frac{9x}{y^7}$

B. $\frac{9y^7}{x}$

C. $\frac{x^2}{9y^3}$

D. $\frac{x}{9y^7}$

E. $\frac{x^{1/2}}{3y^{7/2}}$

17. For $x > 0$, which of the following is equivalent to the expression

$$\frac{4+\frac{2}{x}}{\frac{x}{3}+\frac{1}{6}}?$$

A. 12

B. $\frac{x}{12}$

C. $\frac{9}{x}$

D. $12x$

E. $\frac{12}{x}$

18. What is the value of $\dfrac{80^4 - 1}{80^2 - 1}$?

A. 5999

B. 6001

C. 6299

D. 6399

E. 6401

19. Let f be a linear function such that $f(3) = -1$ and x-intercept is 2. Find $f(-4)$.

A. 6

B. 4

C. 7

D. 5

E. 8

20. Which of the following is an equation of a line perpendicular to $y = -2x+3$ and passing through the point $(2, 1)$?

A. $y + 5 = 3x$

B. $y = 2x - 3$

C. $2y = x$

D. $2y = 4 - x$

E. $y = \dfrac{1}{-2x + 3}$

21. Which of the following equations passes through all of the points: $(-3, 2), (0, 2)$ and $(2, -8)$?

A. $y = x^2 - 4x + 2$

B. $y = 2^x + 2$

C. $2y = 4 - x$

D. $y = -x^2 - 3x + 2$

E. $y = \dfrac{x}{-2x^2 + 3}$

22. If $x+y = 2$ and $x^2-y^2 = 16$, then which of the following is the value of x?

A. -2

B. -3

C. 2

D. 3

E. 5

23. You own 2 hats, 3 shirts, 2 pants and 5 shoes. How many different ways you can dress yourself with hat, shirt, pant and shoe?

A. 12

B. 20

C. 30

D. 60

E. 80

24. You try to graduate college with at least 3.0 GPA. The GPA during the first three years of yours are 3.2, 3.1 and 3.4 respectively. What is the minimum GPA during the last year in order to attian the average of 3.0 GPA? Given that you take the same number of credits every year.

A. 2.3

B. 2.5

C. 2.8

D. 3.0

E. 3.2

25. Assume everyone has equal chance to born in any day of the year (365 days = 1 year). What is the probability that a random person will have the same birthday as yours?

A. $\frac{1}{\sqrt{365}}$

B. $\frac{1}{100}$

C. $\frac{1}{144}$

D. $\frac{1}{365}$

E. $\frac{1}{365^2}$

26. The shareholder value of a particular company grows at a constant rate through time. The relationship of V and T, where V is shareholder value (in hundred bahts) and T represents number of years, has been recorded as below:

T	0	1	2	3	4
V	7	13	19	25	31

Which of the following equations represents this data?

A. $V = T + 6$

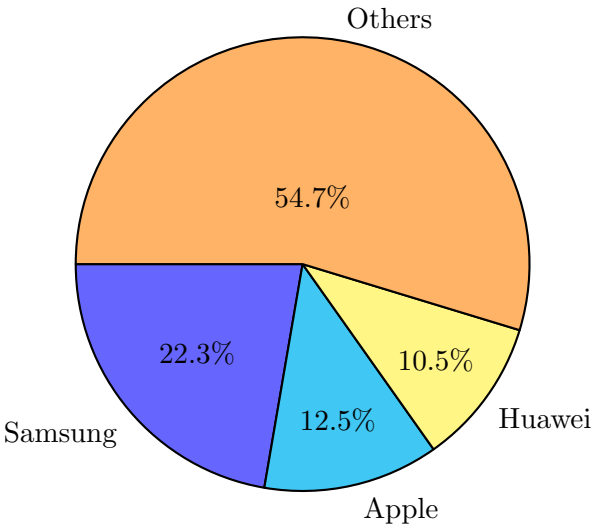
B. $V = 6 \cdot T + 6$

C. $V = 6 \cdot T + 7$

D. $V = 7 \cdot T$

E. $V = 7 \cdot T + 6$

27. According to the data from a certain website: the pie chart below shows the distribution of the smart-phone user according to brand in Quarter 3, 2017. Out of 1000 smartphone users, approximately how many people use phone made by Samsung or Apple?



A. 22

B. 35

C. 125

D. 223

E. 348

28. The heights of one hundred random Thai adults are as follows.

		Women	Men
Height (in cm)	> 167	17	22
	< 167	37	24

Among the women in this survey, what is the ratio of persons whose heights are less than 167 cm?

A. $\frac{17}{100}$

B. $\frac{37}{100}$

C. $\frac{17}{54}$

D. $\frac{37}{54}$

E. $\frac{37}{61}$

29. The relationship of the temperatures between degree Celsius (C) and degree Fahrenheit (F) is given by

$$C = \frac{5(F-32)}{9}.$$

What is 30 degree Celsius in degree Fahrenheit?

A. 72

B. 80

C. 86

D. 94

E. 100

30. The amounts of time (in minutes) I spent on watching YouTube this week are

$$142,\ \ 210,\ \ 34,\ \ 67,\ \ 252,\ \ 52,\ \ 221.$$

What is the median of this data?

A. 104.5

B. 139.71

C. 142

D. 176

E. 210

31.

$$(x^2y - 5y^2 + 3xy^2) - (x^2y - 3xy^2 + 2y^2)$$

Which of the following is equivalent to the expression above?

A. $6xy^2 - 7y^2$

B. $2x^2y - 7y^2$

C. $6xy^2 + 7y^2$

D. $2x^2y + 7y^2$

E. none of the above

32. If $x > 1$, which of the following is equivalent to

$$\frac{1}{\frac{1}{x+1} + \frac{1}{x-1}}?$$

A. $\dfrac{2x}{x^2-1}$

B. $\dfrac{x}{x^2-1}$

C. $\dfrac{x^2-1}{2x}$

D. $\dfrac{x^2-1}{2}$

E. $2x$

33. If $2x - y = 10$, what is the value of $\dfrac{16^x}{4^y}$?

A. 2^{10}

B. 4^8

C. 8^{10}

D. 2^{20}

E. The value cannot be determined from the given information.

34.

$$3x - 4y = -8$$

$$y - 2x = 5$$

What is the solution (x, y) to the system of equations above?

A. $(-2, -1)$

B. $\left(-\dfrac{1}{3}, \dfrac{11}{3}\right)$

C. $(-3, -2)$

D. $\left(-\dfrac{12}{5}, \dfrac{1}{5}\right)$

E. $(-8, 10)$

35. The set of all real numbers x such that $\sqrt{x^2} = -x$ consists of

A. zero only

B. non-positive real numbers only

C. positive real numbers only

D. all real numbers

E. no real numbers

36.

$$h = 3.3a + 28.6$$

A pediatrician uses the model above to estimate the height h of a boy, in inches, in terms of the boy's age a, in years, between the agae of 2 and 5. Based on the model, what is the estimated increase, in inches, of a boy's height each year?

A. 3

B. 14.3

C. 3.3

D. 28.6

E. 4.3

37. Toni is a repair technician for a phone company. Each week, she receives a batch of phones that need repairs. The number of phones that she has left to fix at the end of each day can be estimated with the equation $P = 100 - 25d$ where P is the number of phones left and d is the number of days she has worked that week. Which of the following is correct about this equation?

A. Toni repairs phones at a rate of 100 per hour.

B. Toni will complete the repairs within 100 days.

C. Toni repairs phones at a rate of 4 per day.

D. Toni will complete the repairs within 25 days.

E. Toni starts each week with 100 phones to fix.

38. A square field measures 10 meters by 10 meters. Ten students each mark off a randomly selected spot of the field; each spot is a square and has side lengths of 1 meter, and no two spots overlap. The students count the earthworms contained in the soil to a depth of 5 centimeters beneath the ground's surface in each spot. The results are shown in the table below.

Spot	# of worms	Spot	# of worms
A	170	F	130
B	200	G	150
C	147	H	154
D	126	I	190
E	210	J	198

Which of the following is a reasonable approximation of the number of earthworms to a depth of 5 centimeters beneath the ground's surface in the entire field?

A. 200

B. 170

C. 2000

D. $1,700$

E. $20,000$

39. Alex is a biologist studying the production of apples by two types of apple trees. He noticed that Type A trees produced 15 percent more apples than Type B trees did. Based on Alex's observation, if the type A trees produced 138 apples, how many apples did the Type B trees produced?

A. 110

B. 112

C. 115

D. 120

E. 130

40. The population of piranhas in the Amazon river is estimated over the course of twenty months, as shown in the table.

Time (months)	Population
0	100
5	1,000
10	10,000
15	100,000
20	1,000,0000

Which of the following best describes the relationship between time and the estimated population of piranhas during the twenty months?

A. Increasing linear

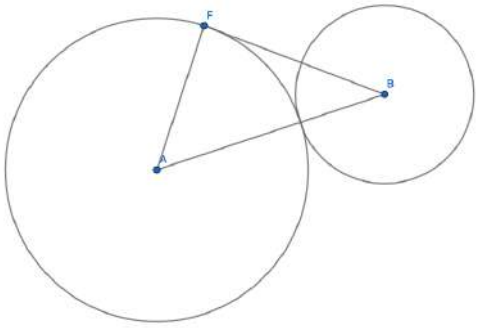
B. Decreasing linear

C. Exponential growth

D. Exponential decay

E. None of the above

41.



In the figure above, A and B are the centers of the circles, $\overline{BF}$ is tangent to the circle (with center A) at F. If the radius of the two circles are 3 and 1, which of the following is the value of $\cos \angle ABF$?

A. $\frac{3}{4}$

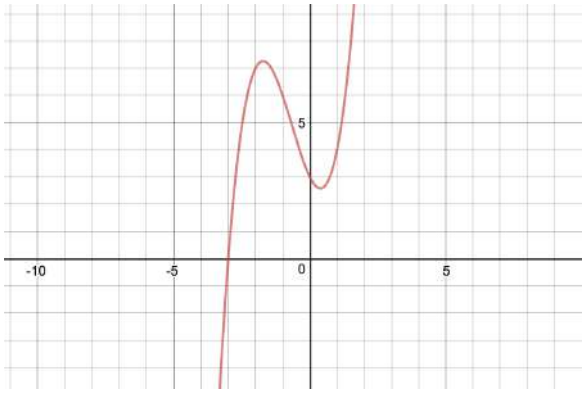
B. $\frac{3}{\sqrt{7}}$

C. $\frac{4}{3}$

D. $\frac{\sqrt{7}}{3}$

E. $\frac{\sqrt{7}}{4}$

42.



Above is the graph of the function $f(x) = x^3 + 2x^2 - 2x + 3$. If k is a constant such that the equation $f(x) = k$ has three real solutions, which of the following could be the value of k?

A. 7

B. -3

C. 2

D. 0

E. 1

43. If a complex number $z = a + bi$, where a and b are real numbers, satisfies the equation

$$(1 + 2i)z = 2 - 3i,$$

what is the value of b? (Note: $i = \sqrt{-1}$)

A. $\frac{4}{5}$

B. $-\frac{7}{5}$

C. $\frac{2}{5}$

D. $-\frac{4}{5}$

E. $\frac{7}{5}$

44.

$$f(x) = (x + 6)(x - 4)$$

The graph of a function g is obtained by shifting the graph of the function f above 2 units to the right. Which of the following is the expression of the function g?

A. $g(x) = (x + 4)(x - 6)$

B. $g(x) = (x + 8)(x - 4)$

C. $g(x) = (x + 6)(x - 4) + 2$

D. $g(x) = (x + 8)(x - 2)$

E. $g(x) = (x + 6)(x - 4) - 2$

45.

$$f(x) = x^3 - 3x - 2$$

The polynomial $f(x)$ is defined above. Which of the following linear polynomial is a factor of $f(x)$?

A. $x - 1$

B. $x + 3$

C. $x - 2$

D. $x + 2$

E. $x - 3$

46.

$$x = 30 + 0.25w$$

$$y = 48.45 - 1.8w$$

In the equations above, x and y represent the price per kilogram, in baht, of grapes and oranges, respectively, w weeks after April 1 during last summer. What was the price per kilogram of grapes when it was equal to the price per kilogram of oranges?

A. 28.65 baht

B. 30.45 baht

C. 32.25 baht

D. 34.05 baht

E. 35.85 baht

47. Which of the following numbers is NOT a sulution of the inequality $3 - \frac{2x}{3} > \frac{x}{2} + 1$?

A. 0

B. $\frac{3}{2}$

C. $\frac{4}{3}$

D. -1

E. $\frac{12}{7}$

48. A line in the xy-plane has a slope of -2 and crosses the y-axis at $y = 2$. Which of the following points is on the line?

A. $(2, 0)$

B. $(2, 2)$

C. $(-2, 2)$

D. $(7, 12)$

E. $(7, -12)$

49. The distance travelled by the Moon in one orbit around the Earth is about 10,921 km. The Moon makes one complete orbit around the Earth in one day. Which of the following is closest to the average speed of the Moon, in metres per second, as it orbits the Earth?

A. $7,500$

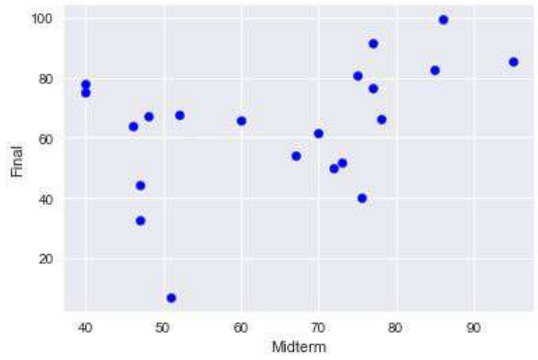
B. 120

C. $10,000$

D. 7.5

E. 0.1

The next two questions refer to the following figure.



Exam scores of students in a math class are represented in the scatter plot above, where each point represents one student. A score of less than 60 is considered a fail.

50. How many students failed the midterm exam but passed the final exam?

A. 3

B. 4

C. 5

D. 8

E. 9

51. The student who had the highest midterm exam score ...

A. also had the highest final exam score.

B. was in the second place in the final exam.

C. was in the third place in the final exam.

D. was in the fourth place in the final exam.

E. was in the fifth place in the final exam.

52. Which of the following complex numbers is equivalent to $\frac{1}{2i} - \frac{3i}{4}$?

A. $\frac{1}{4i}$

B. $-\frac{1}{4i}$

C. $-\frac{2}{4i}$

D. $-\frac{5}{4i}$

E. $-\frac{5i}{4}$

53. The rate of taxis in Town X costs \$3 plus d dollars for each kilometer traveled. If Peter paid \$15.6 for a 21-km trip by taxi, what is the value of d?

A. 0.4

B. 0.5

C. 0.6

D. 0.7

E. 0.8

54. The table below shows a summary of 1,200 responses to the survey question "How do you commute to work?" Based on the table, how many of those surveyed commute to work by Bus or Train?

Transportation	**Percent**
Personal car	50
Bus	23
Taxi	11
Train	7
Others	9

A. 276

B. 84

C. 132

D. 360

E. 840

55.

$$2x - 3y = 5$$
$$y - \frac{x}{2} = 3$$

For the solution (x, y) to the system of equations above, what is the value of $x - y$?

A. 11

B. 8

C. 17

D. 13

E. -11

56. For a function f defined by $f(x) = \dfrac{3x+2}{3-2x}$. Find the value of k so that $f(k) = -\dfrac{4}{7}$.

A. -2

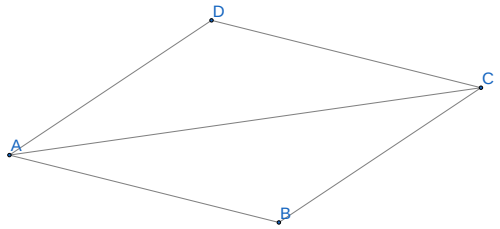
B. -1

C. 1

D. 2

E. 3

57. Consider the parallelogram below. If the angle $\angle BAC$ is 22° and $\angle CAD$ is 25°. What is the angle $\angle ADC$?



A. 135°

B. 123°

C. 133°

D. 125°

E. 145°

58. If k is a solution to the equation $x^2-2x-1=0$, then which of the following statement MUST be true?

A. $k > -1$

B. $k < 0$

C. k is a rational number

D. $k > 2$

E. $k < 2$

59. A wire is cut into two parts in the ratio 3 : 2. Each part is bent to form a square. The ratio of the area of the larger square to the area of the smaller square is

A. 3 : 2

B. 9 : 4

C. 5 : 3

D. 5 : 2

E. 12 : 5

60. Let $g(x) = \dfrac{3x+1}{2}$ and let g^{-1} be the inverse function of g. Evaluate $g^{-1}(5) + g(5)$.

A. 7

B. 10

C. 11

D. 0

E. 14

Sample B Key

Mahidol University International College

Mathematics Test

SAMPLE – KEY

1. A	21. D	41. E
2. B	22. E	42. A
3. A	23. D	43. B
4. B	24. A	44. A
5. B	25. D	45. C
6. C	26. C	46. C
7. B	27. E	47. E
8. D	28. D	48. E
9. C	29. C	49. B
10. B	30. C	50. C
11. B	31. A	51. C
12. E	32. C	52. E
13. C	33. D	53. C
14. E	34. D	54. D
15. D	35. B	55. A
16. D	36. C	56. A
17. E	37. E	57. C
18. E	38. D	58. A
19. A	39. D	59. B
20. C	40. C	60. C