

## SAMPLE MA Admission Exam

- MATH 1
- MATH 2
- ENGLISH

## Math 1 & 2, INSTRUCTIONS

The actual admission exam consists of 20 problems of Math 1 and 20 problems of Math 2. In this sample you have 40 problems for Math 1, just for extra practice.

Math 1 covers topics from elementary mathematics, that has been mostly covered in school.

Math 2 covers basic calculus that you might have covered in your BA studies.

**ISET**

International School of Economics at Tbilisi State University

# MATH I

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**Problem 1****1 point**

If 25 percent of an amount of money is \$500, then 10 percent of the same amount is

- a) 100                      b) 250                      c) 200                      d) 400

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**Problem 2****2 points**

Which of the following is equal to 7 percent of 7 percent?

- a) 49                      b) 0.0049                      c) 0.49                      d) 0.049

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**Problem 3****1 point**

How many integers from 3 to 30, inclusive, are odd?

- a) 14                      b) 15                      c) 16                      d) 17

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**Problem 4****1 point**

If  $p$  and  $q$  are positive integers, how many integers are larger than  $pq$  and smaller than  $(p+1) \cdot (q+2)$ ?

- a)  $p+2q-1$                       b)  $2p+q$                       c)  $2p+q+1$                       d)  $2p+q+2$

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**Problem 5****1 point**

How many 3-digit integers greater than 100 are there in which the sum of the digits equals 3?

- a) Six                                      b) Four                                      c) Five                                      d) Nine

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**Problem 6****1 point**

Which of the following numbers is NOT the sum of three consecutive even integers?

- a) 276                                      b) 294                                      c) 300                                      d) 310

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**Problem 7****1 point**

If  $\log_2(5) < x < \log_2(65)$  and  $x$  is an integer, then how many different values can  $x$  have?

- a) Three                      b) Four                      c) Five                      d) Eight

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**Problem 8****1 point**

If the vertices of a triangle have rectangular coordinates  $(1,1)$ ,  $(9,1)$ , and  $(9,7)$ , respectively, then the perimeter of the triangle is

- a) 10                      b) 14                      c) 24                      d) 36

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**Problem 9****1 point**

For what point  $(x, y)$  on the graph of  $y = \frac{1}{2}x + 1$  does the  $x$ -coordinate equal to  $y$ -coordinate?

- a)  $(\frac{1}{2}, \frac{1}{2})$                       b)  $(-2, -2)$                       c)  $(-\frac{1}{2}, -\frac{1}{2})$                       d)  $(2, 2)$

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**Problem 10****1 points**

In the rectangular coordinate plane, point  $A$  has coordinates  $(-4, 0)$ , point  $B$  has coordinates  $(0, 4)$ , point  $C$  has coordinates  $(4, 0)$ , and point  $D$  has coordinates  $(0, -4)$ . What is the area of quadrilateral  $ABCD$ ?

a) 8

b) 16

c) 24

d) 32

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**Problem 11****1 point**

On the real number line, which of the following is halfway between  $-3.4$  and  $5.2$ ?

a) 0.9

b) 1.2

c) 1.8

d) 4.3

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**Problem 12****1 point**

If one number is chosen at random from the first 1000 positive integers, what is the probability that the number chosen is a multiple of 25?

a)  $\frac{1}{40}$ b)  $\frac{4}{25}$ c)  $\frac{4}{100}$ d)  $\frac{25}{1000}$

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**Problem 13****1 point**

If  $2a + 2b = 7$  and  $3c + 3d = 15$ , then the average (arithmetic mean) of  $a, b, c,$  and  $d$  is

a)  $1\frac{1}{2}$

b)  $2\frac{1}{8}$

c) 3

d)  $4\frac{1}{4}$

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**Problem 14****1 point**

For which of the following lists of numbers is the median equal to the average (arithmetic mean)?

a) 3, 4, 7

b) 1, 10, 20

c) 3, 6, 7, 10, 12

d) 0, 2, 3, 4, 6

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**Problem 15****1 point**

$3.7 \cdot 10^7 =$

a) 370 000

b) 3 700 000

c) 37 000 000

d) 370 000 000



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**Problem 16****1 point**

If  $\frac{1}{4x} + \frac{1}{y} = \frac{1}{3} \cdot \left(\frac{1}{x} + \frac{1}{y}\right)$ , what is  $\frac{x}{y}$ ?

a)  $\frac{2}{3}$

b)  $\frac{1}{2}$

c)  $\frac{1}{8}$

d)  $\frac{1}{9}$

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**Problem 17****1 point**

Which of the following is NOT a solution of the inequality  $3x - 12 > -5x + 4$ ?

a) 1.8

b) 2.5

c) 2.7

d) 3.0

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**Problem 18****1 point**

For which of the following expressions is the value for  $x = 1$  equal to the value for  $x = -1$ ?

a)  $\frac{x-1}{x+1}$

b)  $2x^2 - x$

c)  $(x+1) \cdot (x-1) + x$

d)  $(x+1) \cdot (x-1) + 1$

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**Problem 19****1 point**

If  $\frac{12}{7 - \frac{r}{s}} = 2$  which of the following must be true?

- a)  $r = 6$                       b)  $r = s$                       c)  $r = 2s$                       d)  $r = 3s$

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**Problem 20****1 point**

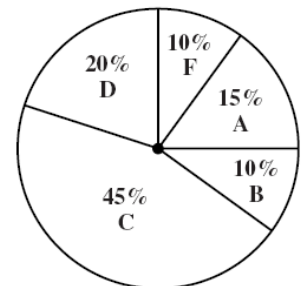
A rectangular solid has a square base and altitude of 7. If the volume of the solid is 252, then the perimeter of the square base is

- a) 9                                  b) 36                                  c) 28                                  d) 24

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**Problem 21****1 point**

The circle graph shown here represents the distribution of the grades of 40 students in a certain class. How many students received F-s or D-s?



- a) 6                                  b) 10                                  c) 12                                  d) 25

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**Problem 22****1 point**

How many diagonals a pentagon has?

- a) 3                      b) 5                      c) 2                      d) 10

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**Problem 23****1 point**

Which set cannot represent the lengths of the sides of a triangle?

- a)  $\{3, 4, 7\}$                       b)  $\{4, 6, 9\}$                       c)  $\{5, 6, 7\}$                       d)  $\{1, 12, 12\}$

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**Problem 24****1 point**

A square is inscribed in a circle. If the circle has radius 4, what is the perimeter of the square ?

- a)  $8\sqrt{2}$                       b) 16                      c)  $16\sqrt{2}$                       d)  $32\sqrt{2}$

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**Problem 25****1 point**

If two sides of a triangle have lengths 3.2 and 5.4 then the length of the third side must be between

- a) 2.2 and 8.6      b) 2.2 and 5.4      c) 0.0 and 2.2      d) 3.2 and 5.4

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**Problem 26****2 points**

If  $x$  is 25 percent more than  $y$ , then  $y$  is what percent less than  $x$ ?

- a) 10%      b) 20%      c) 15%      d)  $12\frac{1}{2}\%$

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**Problem 27****2 points**

If  $a$ ,  $b$ ,  $c$ , and  $d$  are consecutive even integers such that  $a < b < c < d$ , then in terms of  $a$ , the sum  $a + b + d =$

- a)  $3a$       b)  $3a + 2$       c)  $3a + 4$       d)  $3a + 8$

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**Problem 28****2 points**

If  $\frac{3^6 - 1}{n}$  is an integer and  $n$  is an integer, then  $n$  could be each of the following EXCEPT

- a) 52                      b) 16                      c) 26                      d) 28

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**Problem 29****2 points**

If  $n = pqrs$ , where  $p, q, r$  and  $s$  are four different positive prime numbers, how many different positive divisors does  $n$  have, including 1 and  $n$ ?

- a) 5                      b) 6                      c) 8                      d) 16

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**Problem 30****2 points**

Suppose  $n$  is divisible by 8 but not by 6. Then which of the following CANNOT be an integer?

- a)  $\frac{n}{2}$                       b)  $\frac{n}{3}$                       c)  $\frac{n}{4}$                       d)  $\frac{n}{5}$

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**Problem 31****2 points**

One integer will be randomly selected from the integers 1 to 100, inclusive. What is the probability that the selected integer will be a perfect square or a perfect cube?

- a) 0.13                      b) 0.14                      c) 0.12                      d) 0.1

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**Problem 32****2 points**

If  $0 < st < 1$ , then which of the following can NOT be true?

- a)  $s < 1$  and  $t > 0$               b)  $s < -1$  and  $t < -1$               c)  $s > -1$  and  $t < -1$               d)  $s > 1$  and  $t < 1$

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**Problem 33****2 points**

Which of the following statements is (are) always true? ( $x$ ,  $y$  and  $z$  are real and not equal to zero.)

- I.  $\frac{1}{x}$  is more than  $x$ , when  $x$  is less than  $-1$ ;  
II.  $\frac{x+y}{2x}$  equals  $\frac{2y}{x+y}$ , when  $x$  equals  $y$ ;  
III.  $\frac{x+z}{y+z}$  is more than  $\frac{x}{y}$ .

- a) I, II and III;  
b) I and II only;  
c) II and III only;  
d) II only.

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**Problem 34****2 points**

One man can paint a house in  $a$  days and another man in  $b$  days. If together they can do the work in  $d$  days, the equation that expresses the relation between  $a$ ,  $b$  and  $d$  is

- a)  $a \cdot b = d \cdot (a + b)$       b)  $a + b = a \cdot d$       c)  $d \cdot (a + b) = 1$       d)  $a \cdot b = d$

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**Problem 35****2 points**

If  $m$  men can complete a job in  $h$  hours, how long will  $k$  men take to do this job?

- a)  $\frac{k \cdot m}{h}$       b)  $\frac{m}{k \cdot h}$       c)  $\frac{m \cdot h}{k}$       d)  $\frac{h \cdot k}{m}$

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**Problem 36****3 points**

What percent of the integers between 10 and 99, inclusive, have DIFFERENT digits?

- a) 90%      b) 60%      c) 10%      d) 1%

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**Problem 37****3 points**

Find  $(51 + 52 + \dots + 100) - (1 + 2 + \dots + 50)$ .

- a) 2500                      b) 3250                      c) 2550                      d) 2525

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**Problem 38****3 points**

How many positive 4-digit integers begin (on the left) with an odd digit and end with an even digit?

- a) 2500                      b) 2000                      c) 500                      d) 5000

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**Problem 39****3 points**

The average (arithmetic mean) of some 50 numbers is  $X$ , and the average of some other 100 numbers is  $Y$ . What is average of all 150 numbers?

- a)  $\frac{X + Y}{2}$  ;  
b)  $50 \cdot X + 100 \cdot Y$  ;  
c)  $\frac{X + Y}{150}$  ;  
d)  $\frac{50 \cdot X + 100 \cdot Y}{150}$  .



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**Problem 40****3 points**

In a class of 450 students, 300 are taking a mathematics course, 260 are taking a physics course and 30 students are *not* taking either of these courses . How many students are taking both courses?

a) 30

b) 560

c) 110

d) 140

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# MATH II

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**Problem 1****1 Point**

If  $f(x) = \sqrt{\frac{x+1}{|2x-1|}}$ , find the domain of  $f$ .

- a)  $\left[-1; \frac{1}{2}\right)$
- b)  $\left[-1; \frac{1}{2}\right) \cup \left(\frac{1}{2}; \infty\right)$
- c)  $(-\infty; -1] \cup \left(\frac{1}{2}; \infty\right)$
- d)  $(-\infty; \infty)$

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**Problem 2****1 Point**

If  $f(x) = \begin{cases} \sqrt{1-x^2} & \text{if } -1 \leq x < 0 \\ |x-1| & \text{if } x > 0 \end{cases}$ , find the set of all solutions of the equation  $f(x) = x$ .

- a)  $\left\{\frac{1}{\sqrt{2}}; -\frac{1}{\sqrt{2}}\right\}$ ;
- b)  $\left\{-\frac{1}{\sqrt{2}}; \frac{1}{2}\right\}$ ;
- c)  $\left\{\frac{1}{2}\right\}$ ;
- d)  $\left\{\frac{1}{\sqrt{2}}; -\frac{1}{\sqrt{2}}; \frac{1}{2}\right\}$

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**Problem 3****1 Point**

Which of the following transforms the graph of  $y = \frac{1}{2^x}$  into the graph of  $y + 8 = \frac{1}{2^{x-5}}$ ?

- a) shift down by 8 units, left by 5 units;
- b) shift down by 8 units, right by 5 units;
- c) shift up by 8 units, left by 5 units;
- d) shift up by 8 units, right by 5 units.

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**Problem 4****2 Points**

Let  $f$  be the function defined on the set of all real numbers by the formula

$$f(x) = \begin{cases} \frac{x^3 - 8}{x - 2}, & \text{if } x \neq 2, \\ a + 1, & \text{if } x = 2. \end{cases}$$

For what value of  $a$ , the function  $f$  will be continuous?

- a) 11                      b) 10                      c) 3                      d) 2

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**Problem 5****2 Points**

A fair die is rolled 4 times. What is the probability of getting exactly 2 fives?

- a)  $\frac{1}{36}$                       b)  $\frac{1}{3}$                       c)  $\frac{25}{6^4}$                       d)  $\frac{25}{216}$

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**Problem 6****2 Points**

If  $f(x) = x^2 \sin x$ , then  $f'(\pi) =$

- a)  $-\pi^2$                       b)  $-2\pi$                       c) 0                      d)  $\frac{\pi}{2}$

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**Problem 7****2 Points**

Consider functions  $f$  and  $g$  such that  $f(g(x)) = \sqrt{x^2 + 1} - 1$ . If  $g(x) = x^2 + 1$ , then what is the value of  $f(4)$ ?

- a) 17  
b) 3  
c) 1  
d) Data isn't sufficient to find  $f(4)$

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**Problem 8****1 Point**

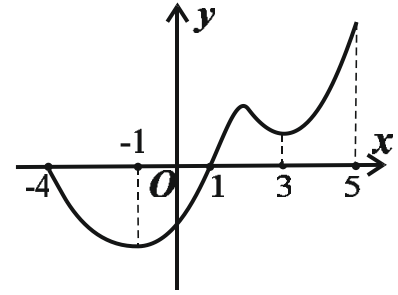
Find the point at which the tangent line of the graph of the function  $y = x^4 + 1$  is parallel to the line  $y = -32x + 1$ .

- a)  $(-2; 17)$   
b)  $(2; 17)$   
c)  $(1; 2)$   
d) Does not exist.

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**Problem 9****2 Points**

The differentiable function  $y = f(x)$  is defined on the segment  $[-4; 5]$ . On the picture is given the graph of a derivative function  $y = f'(x)$ . Find the point where the function  $y = f(x)$  takes the absolute minimum.

a)  $-1$ b)  $0$ c)  $3$ d)  $1$ 

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**Problem 10****2 Points**

The rational function  $R(x) = \frac{2x-6}{x+5}$  has a

- a) vertical asymptote at  $x = -5$  and no horizontal asymptotes;
- b) vertical asymptote at  $x = 5$  and no horizontal asymptotes;
- c) vertical asymptote at  $x = -5$  and horizontal asymptote at  $y = 3$ ;
- d) vertical asymptote at  $x = -5$  and horizontal asymptote at  $y = 2$ .

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**Problem 11****2 Points**

$$\lim_{x \rightarrow 1} \frac{\sqrt{x} - 1}{x^2 - x} =$$

a)  $0$ b)  $1$ c)  $\infty$ d)  $\frac{1}{2}$

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**Problem 12****Point 1**

Find the inverse of the matrix  $A = \begin{pmatrix} 3 & 4 \\ 5 & 6 \end{pmatrix}$ .

- a)  $\begin{pmatrix} \frac{1}{3} & \frac{1}{4} \\ \frac{1}{5} & \frac{1}{6} \end{pmatrix}$ ;
- b)  $\begin{pmatrix} 6 & -4 \\ -5 & 3 \end{pmatrix}$
- c)  $\begin{pmatrix} -3 & 2 \\ \frac{5}{2} & -\frac{3}{2} \end{pmatrix}$
- d)  $\begin{pmatrix} 1 & 0 \\ 0 & 1 \end{pmatrix}$

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**Problem 13****2 Points**

Find a function the graph of which is symmetric with respect to the origin of the  $xoy$  Cartesian coordinate system to the graph of the function  $f(x) = x^3 - 3x^2 + 2x + 4$ .

- a)  $g(x) = -x^3 - 3x^2 - 2x + 4$ ;
- b)  $h(x) = x^3 + 3x^2 + 2x - 4$ ;
- c)  $k(x) = -x^3 + 3x^2 - 2x - 4$ ;
- d)  $u(x) = -x^3 + 3x^2 - 2x + 4$ .

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**Problem 14****2 Points**

If  $f^{-1}$  is an inverse function of the function  $f$  and  $f'(x_0) \neq 0$  then

a)  $(f^{-1})'(f(x_0)) = \frac{1}{f'(x_0)}$ ;

b)  $(f^{-1})'(x_0) = \frac{1}{f'(x_0)}$ ;

c)  $(f^{-1})'(f^{-1}(x_0)) = \frac{1}{f'(x_0)}$ ;

d)  $(f^{-1})'(x_0) = f'(x_0)$ .

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**Problem 15****2 Points**

Let  $x$  and  $y$  be uniformly distributed, independent random variable on  $[0, 1]$ . The probability that the minimum between  $x$  and  $y$  is less than  $\frac{1}{4}$  is

a)  $\frac{1}{16}$

b)  $\frac{7}{16}$

c)  $\frac{1}{2}$

d)  $\frac{5}{16}$



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**Problem 16****3 Points**

Let  $f$  be the function defined on the set of all real numbers by the formula

$$f(x) = \begin{cases} \frac{e^x - 1}{a(e^x - e^{2x})}, & \text{if } x < 0 \\ a\sqrt{x+1} + 2, & \text{if } x \geq 0 \end{cases}.$$

For what value of  $a$ , the limit  $\lim_{x \rightarrow 0} f(x)$  exists?

a)  $-2$ b)  $1$ c)  $\ln 2$ d)  $-1$ 

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**Problem 17****3 Points**

On the interval  $[-1; 3]$ , an absolute minimum of the function  $y = x^3(2x-1)^4$  is

a)  $0$ ;b)  $1$ ;c)  $-81$ ;d)  $-85$ .

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**Problem 18****3 Points**

The sum of two nonnegative numbers,  $x$  and  $y$ , is 12. Find the largest possible value of  $x^2y$ .

- a) 256                      b) 128                      c) 144                      d) 216

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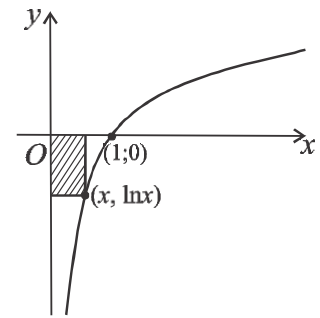
**Problem 19****3 Points**

If  $f(x) = (x-1)(x+2)^2$ , then  $f$  is

- a) increasing on  $(-\infty; -2)$  and on  $(0; \infty)$  and has a relative minimum when  $x = -2$ ;  
b) decreasing on  $(-2; 0)$  and has a relative maximum when  $x = 0$ ;  
c) decreasing on  $(-2; 0)$  and has a relative maximum when  $x = -2$ ;  
d) increasing on  $(-\infty; -2)$  and on  $(0; \infty)$  and has a relative maximum when  $x = 0$ .

**Problem 20****3 Points**

A rectangle in the fourth quadrant of the  $xy$ -plane has adjacent sides on the coordinate axes (see figure). If the vertex opposite the origin is on the curve  $y = \ln x$ , what is the maximum area this rectangle can have?



a)  $\sqrt{e}$

b) 1

c)  $\frac{1}{e}$

d)  $e$

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**ENGLISH**

## Reading Passage I

*Directions: For each blank space, choose the best answer from the choices given below.*

You might be forgiven for (1)\_\_\_\_\_ that the global lockdown (2)\_\_\_\_\_ keeping us all at home can only have been good for the environment. Pollution in cities has decreased, wild animals have increasingly been spotted entering urban areas, and many new cycle lanes have opened up worldwide. But in the world's tropical forest regions, it's another story. Environmental (3)\_\_\_\_\_ have reported an uptick in deforestation during lockdowns, as well as increases in poaching, animal trafficking and illegal mining worldwide. The (4)\_\_\_\_\_ are alarming, environmental experts say, and could be hard to reverse.

There are two main factors that could be (5)\_\_\_\_\_ these developments. The first is criminal groups and (6)\_\_\_\_\_ expanding their activities, taking advantage of the lockdown and diminished forest monitoring and government presence. The second is that people living in rural areas are facing increased economic (7)\_\_\_\_\_ and are forced to rely more heavily on nature for food and income. In some cases, such as Madagascar and Cambodia, there has been a large urban-rural (8)\_\_\_\_\_ as people lose their jobs in the cities or return home to be with their families during quarantine, which has put extra strain on local environments.

Destruction of the rainforest, in particular, will have severe (9)\_\_\_\_\_. For indigenous and other (10)\_\_\_\_\_ who live there, it means a destruction of their way of life and may lead to conflict with the criminals who (11)\_\_\_\_\_ on their territory. Studies have also shown that destroying rainforest ecosystems raises the (12)\_\_\_\_\_ of new pathogens making the jump from animals to humans.

### Questions for Reading Passage I

- |   |  |   |
|---|--|---|
| (1)<br>a) understanding<br>b) believing<br>c) comprehending<br>d) knowing   | (5)<br>a) cultivating<br>b) working<br>c) driving<br>d) growing            | (9)<br>a) ramifications<br>b) burdens<br>c) modifications<br>d) obligations |
| (2)<br>a) concepts<br>b) approaches<br>c) measures<br>d) ideas              | (6)<br>a) opportunists<br>b) entrepreneurs<br>c) capitalists<br>d) tycoons | (10)<br>a) villages<br>b) areas<br>c) settlements<br>d) communities         |
| (3)<br>a) agencies<br>b) conglomerations<br>c) assemblies<br>d) federations | (7)<br>a) developments<br>b) activities<br>c) pressures<br>d) regulations  | (11)<br>a) enter<br>b) violate<br>c) encroach<br>d) invade                  |
| (4)<br>a) ideas<br>b) sequences<br>c) patterns<br>d) advancements           | (8)<br>a) transport<br>b) migration<br>c) jump<br>d) divide                | (12)<br>a) volatility<br>b) pressure<br>c) temperature<br>d) odds           |

## Reading Passage II

*Directions: For each blank space, choose the best answer from the choices given below.*

The physical exertion involved in singing – filling of our lungs, the firm (13)\_\_\_\_\_ of our vocal chords, the movements of our mouth and body – is among the reasons why it can boost our (14)\_\_\_\_\_. Singing is an aerobic exercise which sees the (15)\_\_\_\_\_ of endorphins, the brain’s ‘feel-good’ chemicals. Endorphins are related to an overall lifted feeling of happiness; they give a feeling of (16)\_\_\_\_\_ associated with a reduction in stress. In any situation, whether it is under stress or with any physical (17)\_\_\_\_\_, illness, psychological deprivation, music has the potential to affect our body and mind.

Singing also engages what is potentially the body’s greatest stress-reliever – breathing. Anyone who has ever experienced a panic attack will be all too (18)\_\_\_\_\_ with the terrifying feeling of not being able to catch your breath. This short, shallow breathing leads to a decrease in carbon dioxide in the bloodstream as you (19)\_\_\_\_\_ more of the gas than your cells make. This imbalance in carbon dioxide can cause dizziness and anxiety among other (20)\_\_\_\_\_. Conversely, deep or diaphragmatic breathing allows a full oxygen-exchange to occur in the lung’s cells, activating the body’s parasympathetic nervous system which then slows the heart rate, dilates the blood vessels and lowers your blood pressure.

While deep breathing has long been used in therapeutic practices, the neurophysiology behind it has only recently been (21)\_\_\_\_\_. In a recent study, researchers worked on the (22)\_\_\_\_\_ that focusing on controlling your rate of breathing – a key (23)\_\_\_\_\_ in singing – activates parts of the brain that are linked to emotion, attention and body awareness.

### Questions for Reading Passage II

- |  |  |   |
|--|--|---|
| (13)<br>a) control<br>b) discipline<br>c) restriction<br>d) domination     | (17)<br>a) ailments<br>b) treatments<br>c) medicines<br>d) viruses       | (21)<br>a) overviewed<br>b) explored<br>c) traversed<br>d) toured |
| (14)<br>a) feelings<br>b) atmosphere<br>c) mood<br>d) environment          | (18)<br>a) conspicuous<br>b) familiar<br>c) empathetic<br>d) comfortable | (22)<br>a) hypothesis<br>b) test<br>c) model<br>d) sample         |
| (15)<br>a) restriction<br>b) development<br>c) pushing<br>d) release       | (19)<br>a) expel<br>b) banish<br>c) oust<br>d) exile                     | (23)<br>a) attitude<br>b) attribute<br>c) dimension<br>d) skill   |
| (16)<br>a) contentment<br>b) satisfaction<br>c) euphoria<br>d) inspiration | (20)<br>a) complexes<br>b) developments<br>c) diseases<br>d) symptoms    |   |

### Reading Passage III

*Directions: Read the text below. Then answer the questions for Reading Passage III. Choose the best answer for each question.*

In many parts of the world, migration has replaced fertility and mortality as the leading agent of demographic change. It is estimated that one billion of the world's seven billion people are migrants, and among them, 244 million are international migrants as of 2015. But today, when we talk about migration, we often think of asylum seekers, hazardous adventures, illegal migrants and the current challenging issues related to the European migration crisis. This undesired migration experience is usually made under circumstances of coercion involving threats to life and livelihood, whether arising from wars, ethnic conflicts, religious persecution, famine or natural disaster.

Nevertheless, migration can also be a result of a free choice and desire to move. For individuals coming from the so-called third world, that decision implies a long procedure, a strong plan, meticulous research, and eventually some networking, to meet the very restrictive legal requirements of the Western world.

Research suggests that both low- and high-skilled migration is beneficial to both the receiving and exporting countries. Studies show that the elimination of barriers to migration would have profound effects on world GDP, with estimates of gains ranging between 67–147.3%. Research also finds that migration leads to greater trade in goods and services between the sending and receiving countries. Emigrants have been found to significantly boost foreign direct investment back to their country of origin. In addition, allowing migration is often cited as a tool in the war against poverty. For instance, a 2017 study of Mexican immigrant households in the United States found that by virtue of moving to the United States, the households increase their incomes more than fivefold immediately.

Despite these advantages, developing countries rarely just accept that part of their population will leave. Many have made efforts to invest in their own infrastructure, opening up to privatization, and encouraging internal and external investments to create a more attractive working environment. However, the number of migrants who have chosen to leave their families and make a living in the developed world does not seem to decrease as a result. The efforts made by these countries to improve their education system, gain international recognition, and to create new business dynamics, particularly through start-up clusters or technology centres (technopoles), seem to be not enough to retain young students and skilled professionals.

These young and middle-aged intellectuals, men and women who have attended – or prepared to attend – higher education abroad, are driven by a high desire of learning and self-achievement. They are known to be the subject of the “brain drain” phenomenon. Even though these migrants have the advantage of being literate, highly skilled, and often supported by their host school or employer, they rarely escape the rule of facing a certain level of discrimination – whether with regard to their salaries in comparison to natives, when looking for accommodation, or dealing with the host country's administration. Nevertheless, these intellectual migrants strive to make their own place within the developed countries, and most – if not all – of them, don't miss the opportunity to acquire citizenship of their host country, despite the long administrative procedure that usually entails and the fact that they may have finished their studies or taken most of their foreign professional experience.

### Questions for Reading Passage III

- (24) The author believes the European migration crisis:
- a) Is often a positive development for developing countries.
  - b) Is purely a result of natural disasters.
  - c) Is always driven by free choice.
  - d) Is an example of undesired migration.
- (25) Which of the following about migration from the third world is not supported by the text?
- a) It will cost a lot of money.
  - b) It will take a long time.
  - c) It will require establishing contacts in the host country.
  - d) It will require detailed planning.
- (26) According to the text, developing countries' efforts to reduce the brain drain have:
- a) Successfully reduced migration from their countries.
  - b) Led to a steady rise in migration.
  - c) Had little impact on overall migration.
  - d) Have dramatically increased migration levels.
- (27) All of the following are mentioned as ways developing countries have sought to retain their populations, except:
- a) Making education improvements
  - b) Promoting investments
  - c) Embracing opportunities offered by new technology
  - d) Increasing salaries
- (28) What, according to the text, is likely false about 'Brain drain' migrants?
- a) They are highly motivated to succeed.
  - b) They will earn similar salaries as native workers.
  - c) They are often supported by organisations within their host country.
  - d) They face administrative barriers within the host country.
- (29) What does the text state about intellectual migrants?
- a) They often want to return to their home countries.
  - b) They seek to make a home for themselves in their host country.
  - c) They always gain citizenship within the host country.
  - d) They often continue their education upon the completion of their initial studies.
- (30) According to the text, allowing free movement of people internationally would likely:
- a) Harm exporting countries through the 'brain drain'.
  - b) Increase the likelihood of war and ethnic conflict.
  - c) Increase international trade and improve the global economy.
  - d) Result in more attractive work environments worldwide.



### **Reading Passage IV**

*Directions: Read the text below. Then answer the questions for Reading Passage IV. Choose the best answer for each question.*

The League of Nations was the first worldwide intergovernmental organisation whose principal mission was to **promote** and maintain world peace. It was founded on 10 January 1920 following the Paris Peace Conference that ended the First World War; in 1919 U.S. president Woodrow Wilson won the Nobel Peace Prize for his role as the leading architect of the League.

The organisation's primary goals, as stated in its **Covenant**, included preventing wars through collective security and disarmament and settling international disputes through negotiation and **arbitration**. Other issues in this and related treaties included labour conditions, just treatment of native inhabitants, human and drug trafficking, the arms trade, global health, prisoners of war, and protection of minorities in Europe. The Covenant of the League of Nations was signed on 28 June 1919 as Part I of the Treaty of Versailles, and it became effective together with the rest of the Treaty on 10 January 1920. The first meeting of the Council of the League took place on 16 January 1920, and the first meeting of the Assembly of the League took place on 15 November 1920.

The diplomatic philosophy behind the League represented a fundamental **shift** from the preceding hundred years. The League lacked its own armed force and depended on the victorious First World War Allies (France, the United Kingdom, Italy and Japan were the permanent members of the Executive Council) to **enforce** its resolutions, keep to its economic **sanctions**, or provide an army when needed. The Great Powers were often reluctant to do so. Sanctions could hurt League members, so they were reluctant to **comply** with them. During the Second Italo-Abyssinian War, when the League accused Italian soldiers of targeting Red Cross medical tents, an **incensed** Benito Mussolini responded that "the League is very well when sparrows shout, but no good at all when eagles fall out."

At its greatest extent from 28 September 1934 to 23 February 1935, it had 58 members. After some notable successes and some early failures in the 1920s, the League ultimately proved incapable of preventing aggression by the Axis powers in the 1930s. The credibility of the organization was weakened by the fact that the United States never joined the League and the Soviet Union joined late and was soon expelled after invading Finland. As its influence **waned**, Germany withdrew from the League, as did Japan, Italy, Spain and others. The onset of the Second World War showed that the League had failed its primary purpose, which was to prevent any future world war.

### **Questions for Reading Passage IV**

- (31) The word 'promote' in the passage is closest in meaning to
- a) oppose
  - b) support
  - c) reject
  - d) apply

- (32) The word 'Covenant' in the passage is closest in meaning to
- a) pledge
  - b) arrangement
  - c) stipulation
  - d) definition
- (33) The word 'arbitration' in the passage is closest in meaning to
- a) diplomacy
  - b) justice
  - c) argumentation
  - d) mediation
- (34) The word 'shift' in the passage is closest in meaning to
- a) leap
  - b) change
  - c) acceleration
  - d) continuation
- (35) The word 'enforce' in the passage is closest in meaning to
- a) compel
  - b) coerce
  - c) impose
  - d) propel
- (36) The word 'sanctions' in the passage is closest in meaning to
- a) affirmations
  - b) supports
  - c) agreements
  - d) restrictions
- (37) The word 'comply' in the passage is closest in meaning to
- a) coincide
  - b) negotiate
  - c) cooperate
  - d) conform
- (38) The word 'incensed' in the passage is closest in meaning to
- a) nonplussed
  - b) bemused
  - c) angry
  - d) jovial
- (39) The word 'waned' in the passage is closest in meaning to
- a) cheapened
  - b) weakened
  - c) spread
  - d) eclipsed

## Reading Passage V

*Directions: Read the text below. Then answer the questions for Reading Passage V. Choose the best answer for each question.*

Flamingos are an ancient group of birds, with distinctly flamingo-like fossils dating back at least 50 million years. Ruins from ancient human cultures have been found to depict flamingos (particularly South American tribes that worshipped animals) and the upper echelons of Roman society ate their tongues as a delicacy. The flamingo family is composed of a number of different types, but while it is believed more varieties existed in prior years, it is not particularly diverse, and today there are only five or six species, depending on who's doing the counting and classifying.

Flamingos are found patchily throughout the world, wherever there are shallow salt pans, brackish waters or lagoons to exploit. Outfitted with specialized salt glands that allow them to excrete excess salt they ingest, flamingos can take advantage of habitats that not many other animals can. Although mostly found in the Americas and Africa, flamingos can also be found in the southern parts of Europe.

The birds may seem to epitomize the tropics, but they also live in the Andes, 15,000 feet above sea level, where they rest on lakes that freeze around them overnight. "You'll see them sitting there like snowballs, frozen on ice," Dr. Arengo, a flamingo expert, said. "And as the temperature warms up, they thaw out, fluff themselves up, and go about their business." Still, flamingos looking like snowballs is not the image usually associated with the pink birds; indeed, the 1960s and '70s saw plastic flamingos become popular decorations for front lawns all across the United States, a symbol of heat and summer that later changed to an association with classlessness and cheap tastes.

Wherever they go, flamingos are filter feeders, the avian equivalent of baleen whales; they skate slowly through their chosen wet environment, treading through mud and water with their webbed feet, panning for brine shrimp, algae, insects, larvae – whatever the local microbes may be. A flamingo submerges its head upside down, allowing its bent upper bill, with its curtain of comb-like filaments, to serve as scoop and colander, all abetted by its formidable machine tool of a tongue.

Given their large bodies and energy-intensive feeding style, flamingos do what they can to conserve energy. Dr. Anderson, who studies flamingos at Philadelphia Zoo, has published a series of papers arguing that flamingos stand on one leg for thermoregulatory reasons – to keep themselves warm. "Just as we hug everything into the torso when we're cold, so flamingos will hold a leg close to the body," Dr. Anderson said. "They're trying to diminish the surface area exposed to the elements." Researchers have shown that as temperatures drop, flamingo legs rise, and that flamingos standing in water strike the unipedal pose far more often than flamingos resting on warmer ground. Conversely, Royal Society researchers have put forward the idea that flamingos actually stand on one leg because it's easier: using flamingo skeletons and cadavers, the researchers were able to make the dead flamingos stand on one leg, but not on two. This is achieved by the unique leg structure allowing the limb to lock itself into place.

Resting flamingos also compress themselves by folding their necks and tucking their heads into their backsides, and here the Anderson team has found a psychosocial twist to the story. They have shown that when the birds do this, they display a degree of preference for left and right

motion, like humans do being predominantly left or right-handed; most flamingos curve their necks to the right. Intriguingly, those in that lean to the left also get into more fights than the right-leaning ones, perhaps because of brain-hemisphere differences. The left hemisphere is associated with positive social behaviours; if a right-curving bird is indeed a left-brainer, it may have a more amiable and friendly temperament overall.

### Questions for Reading Passage V

(40) Which statement best expresses the main idea of the first paragraph?

- a) The oldest evidence of the existence of flamingos dates back 50 million years.
- b) Historically, there was a greater number of different types of flamingo compared to modern times.
- c) The exact number of different varieties of flamingos is dependent on several factors concerning who classifies them and what methods they use.
- d) There are between five and six different types of flamingo in the world.

(41) Which statement best expresses the main idea of the second paragraph?

- a) The majority of flamingo populations are in North and South America, as well as Africa.
- b) Flamingos live wherever there are shallow water sources that they can feed in.
- c) Flamingos can live in environments where other animals would struggle.
- d) Flamingos have special glands that allow them to remove excess salt from their food.

(42) What are flamingos most commonly associated with?

- a) Cheap tastes and stereotypically lower-class garden decorations.
- b) Warm climates and summertime.
- c) The Andes mountains.
- d) Birds looking like snowballs on frozen lakes in the winter.

(43) Flamingos are like baleen whales because:

- a) They inhabit and find their food in aquatic environments.
- b) They principally feed on insects, larvae and shrimp.
- c) They feed upside down, with help from the movement of their tongues.
- d) They use a biological filtration system to feed.

(44) According to the information in the text:

- a) Flamingos bring one leg up into their body to conserve body heat in cold water.
- b) Flamingos bring one leg up into their body because it is more comfortable than standing on two legs.
- c) It is unknown for certain why flamingos stand and sleep on one leg.
- d) Flamingos are pink and red because of their unique diet.

(45) The most obvious clue that flamingos can be observed to be left- or right-minded is:

- a) The way in which they tuck their heads into their bodies.
- b) Whether they are friendly or not.
- c) The number of fights they get into with other birds.
- d) The way in which they walk and turn.

## Reading Passage VI

*Directions: Read the text below. Then answer the questions for Reading Passage VI. Choose the best answer for each question.*

The First English Civil War, which ended in 1646, was fought between those loyal to the country's elected Parliament and their enemies loyal to the Crown, yet all parties agreed that a 'well-ordered' monarchy was divinely mandated. However, **they** disagreed on what 'well-ordered' meant, particularly regarding the balance of power between the King and Parliament, and who held ultimate authority in clerical affairs. There was considerable alignment among moderates, choice of sides often being down to personal loyalties and relationships. Royalists supported a Church of England governed by bishops chosen by the King; those who supported Parliament felt that the King was answerable to the leaders of the church, who should be appointed by church-goers. At the time, **this** would have been an unprecedented step in British history.

'Puritan' was a general term for anyone who wanted to reform, or 'purify', the Church of England; Presbyterians were the most prominent, but there were many others, often grouped together as Independents. Presbyterians were over-represented in Parliament, and generally believed in a constitutional monarchy, and wanted to keep the church, but as a reformed, Presbyterian body. This in **itself** was not an idea that found much traction with the British public, whatever their political loyalties. **These** actually often depended on their geographical area, with clean divides across the map of England.

The series of English Civil Wars ended with a partial restoration of the monarchy, and the establishment of the political system that still governs the United Kingdom today. The United States, meanwhile, still struggles with the legacy of its own Civil War; however, **it** was started due to fundamentally different reasons, therefore comparisons must be made with caution.

### Questions for Reading Passage VI

- (46) The highlighted word 'they' refers to:
- a) People loyal to the King and Crown
  - b) People loyal to the government and Parliament
  - c) People who were loyal to the King, and people who were loyal to Parliament
  - d) The King and Parliament
- (47) The highlighted word 'this' refers to:
- a) The first instance of a democratic process in British history.
  - b) The King being responsible to church leaders chosen by the people.
  - c) The Church and Parliament agreeing on how to govern the country.
  - d) The establishment of a Church of England.
- (48) The highlighted word 'itself' refers to:
- a) Making the Church into an organization dominated by Presbyterians.
  - b) The presence of many Presbyterians in the country's Parliament.
  - c) The establishment of a constitutional monarchy for England.
  - d) Including Independents as part of the Church.

(49) The highlighted word 'these' refers to:

- a) Presbyterians
- b) Churches
- c) Members of the public
- d) Political beliefs

(50) The highlighted word 'it' refers to:

- a) The United States.
- b) The American Civil War
- c) The English Civil War
- d) The British monarchy