



امتحان تجريبي لنهاية الفصل الدراسي الأول 2025/2026
First semester mock exam 2025/2026

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الصف	Class	11
المسار	Stream	متقدم / Advance
المادة	Subject	Math / الرياضيات

يملأ هذا الجدول بدقة تامة من قبل لجنة التقدير

This table must be filled in accurately by the marking committee

المراجع Reviewer		المقدرة 1 Marker 1		المقدرة 1 Marker 1		رقم السؤال Question NO.
الاسم Name	الدرجة Mark	الاسم Name	الدرجة Mark	الاسم Name	الدرجة Mark	
						Q.(1)
						Q.(2)
						Q.(3)
						Q.(4)
						Q.(5)

المراجع Reviewer		المقدرة 1 Marker 1		المقدرة 1 Marker 1		رقم السؤال Question NO.
الاسم Name	الدرجة Mark	الاسم Name	الدرجة Mark	الاسم Name	الدرجة Mark	
						MCQ

المراجع Reviewer		المقدرة Marker		المجموع Total
التوقيع Signature	الاسم Name	التوقيع Signature	الاسم Name	

WRITING QUESTION 1

Solve each equation

a) $25^{2x+3} = 25^{5x-9}$

b) $125^{3x-4} = 25^{4x+2}$

5

WRITING QUESTION 2 PART A

Solve the equation

$\log_6 (6x^2 - 3) = \log_6 7x$

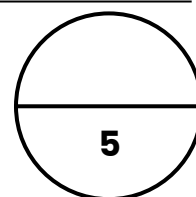
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WRITING QUESTION 2 PART B

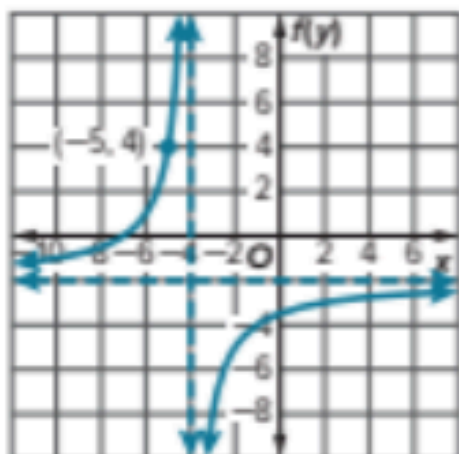
Use $\log_4 2 = 0.5$, $\log_4 3 \approx 0.7925$, and $\log_4 5 \approx 1.1610$ to approximate the value of each expression.

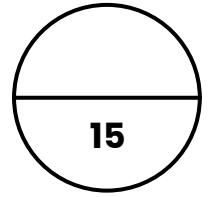
13. $\log_4 30$

15. $\log_4 \frac{2}{3}$

WRITING QUESTION 3

Identify the values of a , h , k . Then write a function for the graph $g(x) = \frac{a}{x-h} + k$.



WRITING QUESTION 4 PART A

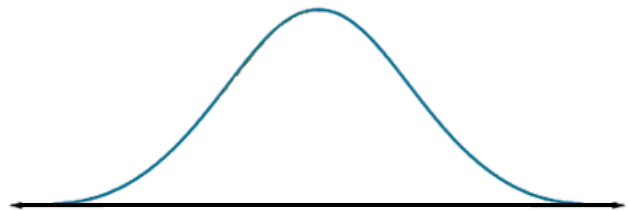
Find the z-value for each standard normal distribution.

$$\sigma = 9.8, X = 55.4, \text{ and } \mu = 68.34$$

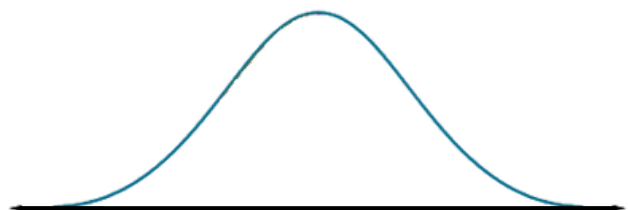
WRITING QUESTION 4 PART B

Use the table to find the area under the normal curve for the following

$$-2.29 < z < 2.76$$

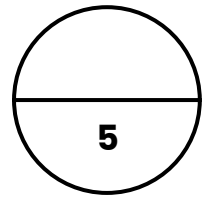
**WRITING QUESTION 4 PART C**

Use a standard normal distribution table to find the area under the normal curve within the interval ($Z > -1.18$). Identify the probability for the left point and identify the area under the curve within the interval



WRITING QUESTION 5

Find the period, asymptotes, x-intercepts, midline, and transformations of $y = -\frac{1}{3} \tan 2x$. Then graph the function.

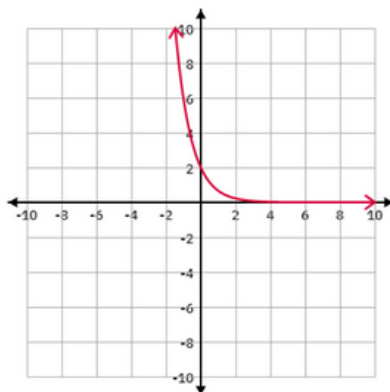
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MULTIPLE CHOICE QUESTIONS

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QUESTION 1

Identify the domain and range of $y = 2\left(\frac{1}{3}\right)^x$, shown in the graph.



Domain : all positive real number
Range : all real numbers

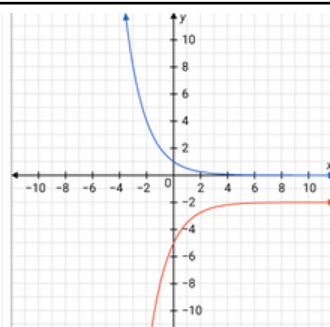
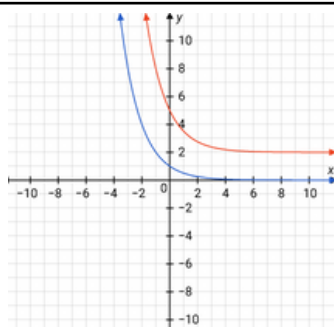
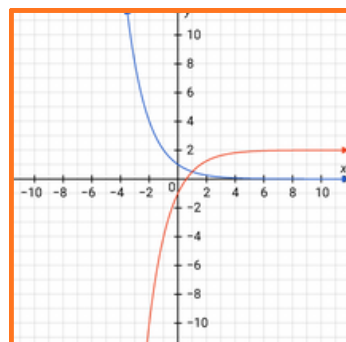
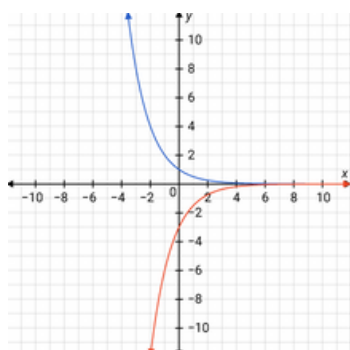
Domain : all real numbers less than -2
Range : all real numbers

Domain : all real number
Range : all positive real numbers

Domain : all real number
Range : all negative real numbers greater than -2

QUESTION 2

Which graph shows the parent function $y = 0.5^x$ and the transformed function $y = -3(0.5)^x + 2$?



MULTIPLE CHOICE QUESTIONS

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QUESTION 3

Consider the function $f(x) = -2e^{x+3} + 2$.

Find the average rate of change over the interval $[-7, -4]$.

A) 0.233

C) 1.500

B) -0.233

D) -1.500

QUESTION 4

Write $\log_3 27 = 3$ in exponential form.

A) $27 = 3^1$ C) $3^3 = 27$ B) $3 = 27^3$ D) $3^{27} = 3$ **QUESTION 5**

What is $5^{-3} = \frac{1}{125}$ in logarithmic form?

A) $\log_5 \left(\frac{1}{125} \right) = -3$ C) $\log_3 5 = \frac{1}{125}$ B) $\log_5 125 = -3$ D) $\log_{\frac{1}{125}} 5 = -3$

MULTIPLE CHOICE QUESTIONS

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QUESTION 6Evaluate $\log_{64} 2$.

A) 6

C) 3

B) $\frac{1}{6}$ D) $\frac{1}{3}$ **QUESTION 7**The expression $\ln 25 - 3\ln 5 + \ln 3x$ written as a single logarithm isA) $\ln(75x)$ C) $\ln\left(\frac{25 \cdot 3x}{5^3}\right)$ B) $\ln\left(\frac{3x}{5}\right)$ D) $\ln\left(\frac{5}{3x}\right)$ **QUESTION 8**The table shows the growth models for two types of bacteria, where y represents the number of bacteria, and t represents the time in minutes.

Bacteria	Equation
A	$y = 200 e^{kt}$
B	$y = 40 e^{0.615 t}$

For bacteria A, there are initially 200 bacteria and 850 bacteria after 40 minutes.

Use this information to determine the amount of time, to the nearest minute, for the number of bacteria B to exceed the number of bacteria A.

The number of bacteria B will exceed the number of bacteria A in about minutes.

A) 1 minute

C) 10 minutes

B) 3 minutes

D) 40 minutes

MULTIPLE CHOICE QUESTIONS

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QUESTION 9Simplify $\frac{x^2 - 6x + 8}{6 - 3x}$, $x \neq 2$.

A) $\frac{x-4}{3}$

C) $\frac{x-2}{3x}$

B) $-\frac{x-4}{3}$

D) $-\frac{x-2}{3}$

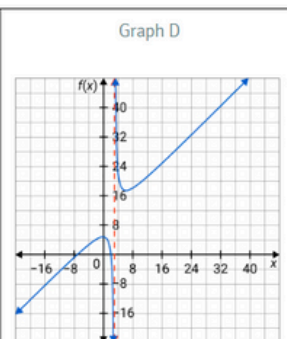
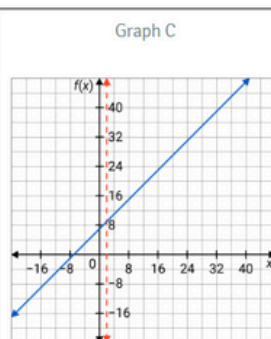
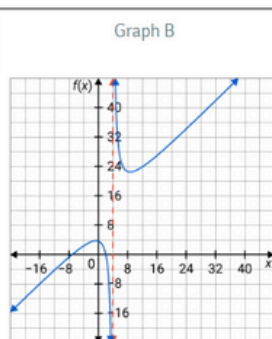
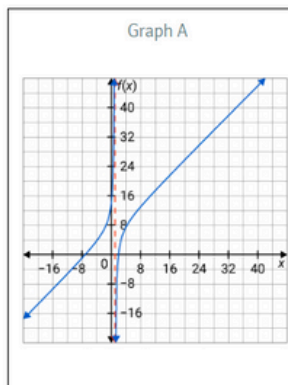
QUESTION 10Simplify $\frac{8x}{3x+12} + \frac{5}{x^2-16}$.

A) $\frac{8x^2 - 32x + 15}{3(x-4)(x+4)}$

C) $\frac{8x^2 + 32x + 15}{3(x-4)(x+4)}$

B) $\frac{8x^2 - 32x - 15}{3(x-4)(x+4)}$

D) $\frac{8x^2 - 15}{3(x-4)(x+4)}$

QUESTION 11Which graph shows the function $f(x) = \frac{x^2 + 5x - 14}{x - 4}$?

A) Graph A

C) Graph C

B) Graph B

D) Graph D

MULTIPLE CHOICE QUESTIONS

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QUESTION 12

Find the zeros of the rational function $f(x) = \frac{x^2 - 9}{x + 1}$.

A) $x = -1$

C) $x = -3, 3$

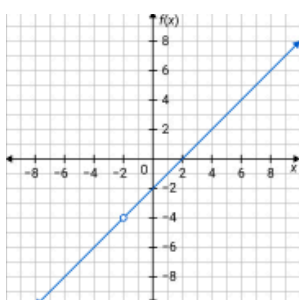
B) $x = 3$

D) $x = -3, -1$

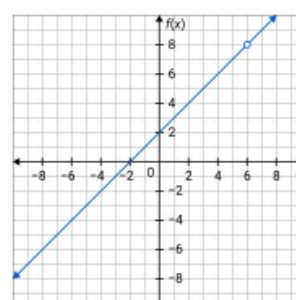
QUESTION 13

Which graph shows the function $f(x) = \frac{x^2 + 8x + 12}{x + 6}$?

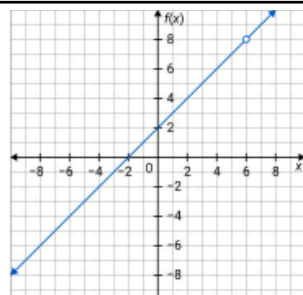
A)



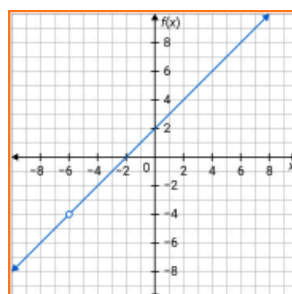
C)



B)



D)

**QUESTION 14**

z varies directly as x and x varies inversely as y . When $x = 5$ and $y = 0.68$, $z = 100$.

Find the equation of variation of y and z ?

A) $yz = 68$

C) $z = -68y$

B) $yz = -68$

D) $z = 68y$

MULTIPLE CHOICE QUESTIONS

60

QUESTION 15

What is the solution to this rational equation?

$$\frac{8}{x+10} = \frac{2}{x+1}$$

A) $x = -10$

C) $x = 2$

B) $x = -1$

D) No solution

QUESTION 16Identify each sample or question as *biased* or *unbiased*. Explain your reasoning.

Every tenth student at band camp is asked to name his or her favorite band for a survey about the campers.

A) Biased – only students who like music will be selected

C) Unbiased – every tenth person is chosen randomly

B) Biased – only band members are surveyed

D) Unbiased – all students are surveyed

QUESTION 17

Safa's bag contained 5 green crayons, 8 orange crayons, and 12 black crayons.

After 100 random selections with replacement the results are recorded as follows.

Find the theoretical and experimental probabilities of selecting the green crayon.

Color of Crayons	Frequency
Black	36
Orange	29
Green	35

A) Theoretical = $\frac{1}{5}$, Experimental = $\frac{35}{100}$ C) Theoretical = $\frac{5}{20}$, Experimental = $\frac{36}{100}$ B) Theoretical = $\frac{5}{25}$, Experimental = $\frac{29}{100}$ D) Theoretical = $\frac{1}{3}$, Experimental = $\frac{35}{100}$

MULTIPLE CHOICE QUESTIONS

60

QUESTION 18

The scores in a Biology test of students in two classes are shown.
Use the mean and the standard deviation to compare the two distributions.

Class A			
9	9	9	10
12	12	13	13
13	14	15	15
15	16	17	18

Class B			
6	7	7	9
11	12	12	13
14	14	14	16
16	18	19	20

A) Class A has a higher average and more variability than Class B

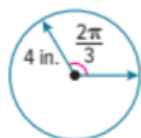
C) Class B has a higher average and less variability than Class A

B) Class B has a slightly lower average and greater variability than Class A

D) Both classes have the same average and same variability

QUESTION 19

Find the length of each arc. Round to the nearest tenth.



A) 4.2 in

C) 8.4 in

B) 6.3 in

D) 10.5 in

QUESTION 20Which graph shows $f(x) = \sin x$ and $g(x) = \sin 5x$?