وزارة التربية والتعليم و التعليم الفنى
الإدارة المركزية للتعليم العام
إدارة تنمية مادة الرياضيات

برعاية معالي وزير التربية والتعليم و التعليم الفنى
السيد الأستاذ/ محمد عبد اللطيف

وتوجيهات رئيس الإدارة المركزية للتعليم العام

د/ هالة عبد السلام خفاجى

إشراف علمي

مستشار الرياضيات

أ/ منال عزقول

أداءات وتقييمات لمنهج الرياضيات البحتة لغات

للصف الثانى الثانوي "علمى"

الفصل الدراسى الأول

للعام الدراسي 2026 / 2027

الأسبوع الخامس

لجنة الإعداد

د/ محمد عبد العاطى أ/ محمد الفار أ/ عفاف جاد

ترجمة

أ/ عمرو فاروق

مراجعة الترجمة

أ/ شريف البرهامى

Algebra: Graphical representation of functions

1) If f and g are two polynomial functions, and if $f(x) = g(x)$, given that:
$f(x) = (2a - 8)x^3 + 5x^2 - x + c$, $g(x) = (a + b)x^2 + cx + k + 3$. Then find the value of k.

Solu: .....

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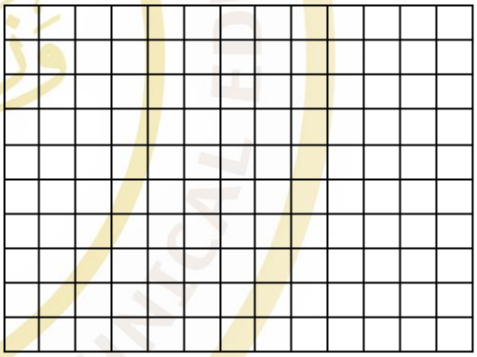
2) Graph the function f : $f(x) = 1 - (2 - x)^2$, from the graph deduce its domain, its range, discuss its monotony and mention its type (even, odd or otherwise).

Solu: .....

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3) Graph the function f : $f(x) = \frac{1}{2-x} - 1$, from the graph deduce its domain, its range, discuss its monotony and mention its type (even, odd or otherwise).



Solu: .....

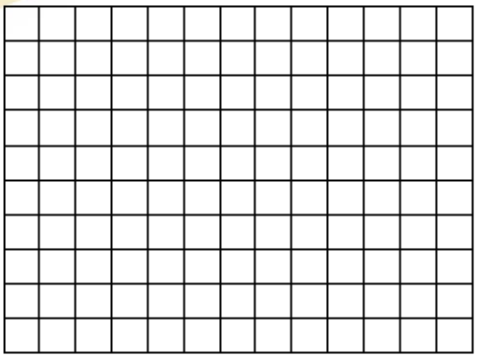
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4) By using the curve of the function $f(x) = x^3$
Graph the function g : $g(x) = (3 - x)^3 - 2$, then determine the point of symmetry of the function $g(x)$



Solu: .....

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Calculus: Finding limits of a function using conjugate

5) Find: $\lim\limits_{x\to 4} \dfrac{\sqrt{x-3}-1}{x-4}$

Solu: .....

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6) Find: $\lim\limits_{x\to 5} \dfrac{x^2-5x}{\sqrt{x+4}-3}$

Solu: .....

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7) Find: $\lim\limits_{x\to 2} \dfrac{2x^2-4x}{\sqrt{x+2}-2}$

Solu: .....

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Trigonometry: Exercises on the Sine Rule

8) Solve the triangle ABC in which a = 7 cm, m(∠ B) = 30° , and the radius length of its circumcircle equals 5 cm.

Solu: .....

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9) ABCD is a parallelogram in which m(∠ A) = 50º , m(∠ DBC) = 70º , BD = 10 cm.
Find the perimeter of the parallelogram to the nearest centimeter.

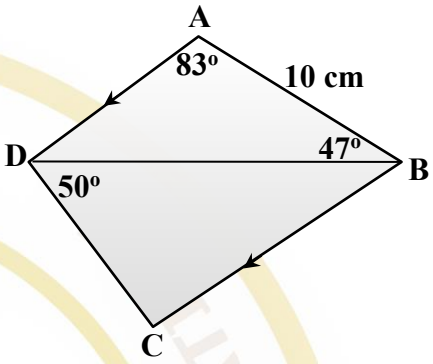
Solu: .....

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10) In the opposite figure:
ABCD is a quadrilateral in which BA = 10 cm,
$\overline{AD}$ // $\overline{BC}$, m(∠ BAD) = 83º, m(∠ ABD) = 47º,
m(∠ CDB) = 50º ,
Find the length of $\overline{CD}$ to the nearest centimeter



Solu: .....

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⑤ الرياضيات البحتة لغات ـ للصف الثاني الثانوي علمي الأداء المنزلى الأسبوع الخامس ⑤

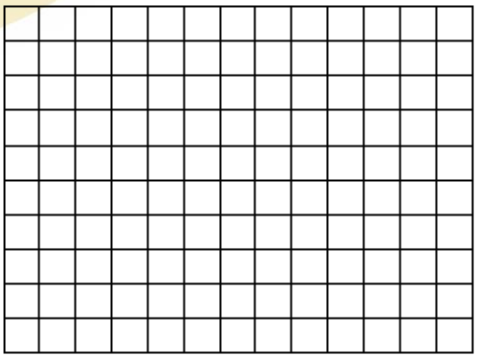
Algebra: Graphical representation of functions

1) If f and g are two polynomial functions, and if f(x) = g(x) , given that:
f(x) = (a – 5) x^3 + 7 x^2 – c , g(x) = (c + a) x^2 + k – 1 . Then find the value of k.

Solu: .....

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2) Graph the function f : f(x) = 3 – (x – 1)^2 , from the graph deduce its domain, its range, discuss its monotony and mention its type (even, odd or otherwise).



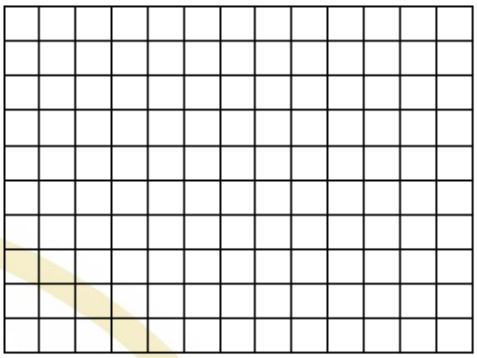
Solu: .....

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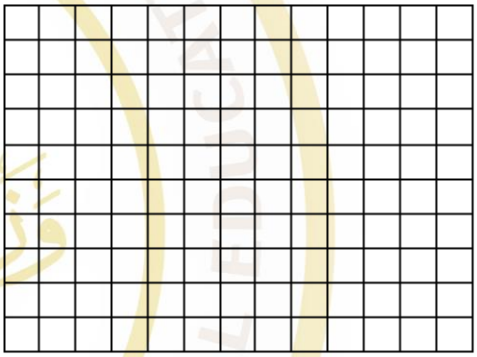
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3) Graph the function f : f(x) = $\frac{1}{x+2}$, from the graph deduce its domain, its range, discuss its monotony and mention its type (even, odd or otherwise).



Solu: .....
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4) By using the curve of the function f(x) = x^3
Graph the function g : g(x) = $(2-x)^3 - 1$, then determine the point of symmetry of the function g(x)



Solu: .....
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Calculus: Finding limits of a function using conjugate

5) Find: $\lim_{x\to 5} \frac{\sqrt{x^2-9}-4}{x-5}$

Solu: .....
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6) Find: $\lim_{x\to 6} \frac{x^2-6x}{\sqrt{x+3}-3}$

Solu: .....

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7) Find: $\lim_{x\to 3} \frac{2x^2-6x}{\sqrt{x+6}-3}$

Solu: .....

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Trigonometry: Exercises on the Sine Rule

8) ABCD is a parallelogram in which m(∠ A) = 40º , m(∠ DBC) = 65º , BD = 9 cm. Find the perimeter of the parallelogram to the nearest centimeter.

Solu: .....

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9) ABCD is a quadrilateral in which CD = 100 cm , m(∠ BCA) = 36º , m(∠ BDA) = 55º , m(∠ BCD) = 85º , m(∠ CDA) = 87º , BD = 10 cm. Find the area of the quadrilateral ABCD to the nearest centimeter square.

Solu: .....

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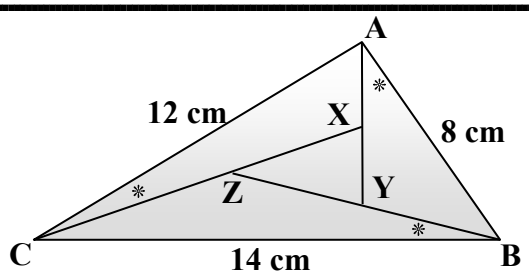
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10) In the opposite figure:
ABC is a triangle in which AB = 8 cm , AC = 12 cm ,
BC = 14 cm , m(∠ BAY) = m(∠ ZBC) = m(∠ XCA)
Find ZY : XZ : XY



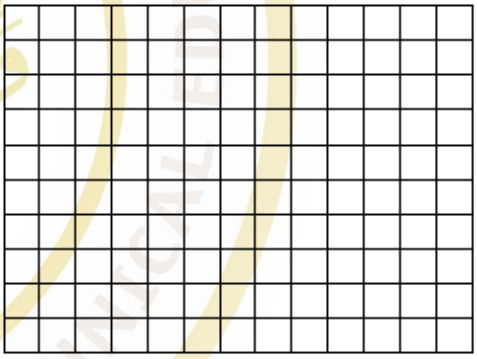
Solu: .....
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❺ الرياضيات البحتة لغات ـ للصف الثاني الثانوي علمي التقييمات الأسبوعية الأسبوع الرابع ❺

The first group

1) Graph the function f : f (x) = $\begin{cases} \frac{1}{x} & \text{when} \quad x < 0 \\ |x| & \text{when} \quad x \geq 0 \end{cases}$

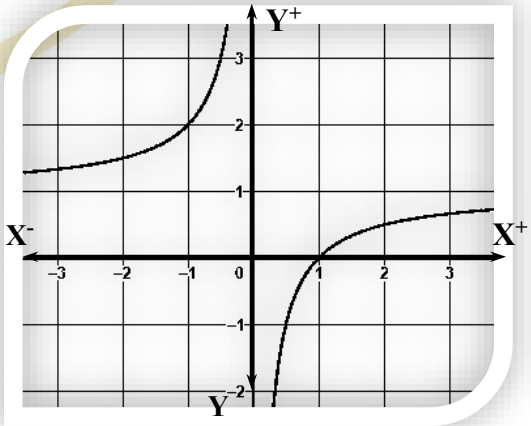


Then from the graph deduce its range , its domain
and mention its type (even, odd or otherwise).

Solu: .....
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2) The opposite figure represents the graph of the function

f(x) = $\frac{1}{x-b}$ + c Write the rule of the function.



Then deduce its domain, its range and Discuss its monotony

Solu: .....
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3) Find: $\lim_{x \to 5} \frac{x^2 - 25}{x - 5}$

Solu: .....

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4) Find: $\lim_{x \to 2} \frac{x - 2}{\sqrt{x + 7} - 3}$

Solu: .....

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5) ABC is a triangle in which m(∠ A) = 55° , m(∠ B) = 45° , the diameter length of its circumcircle equals 12 cm. Find its perimeter.

Solu: .....

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The second group

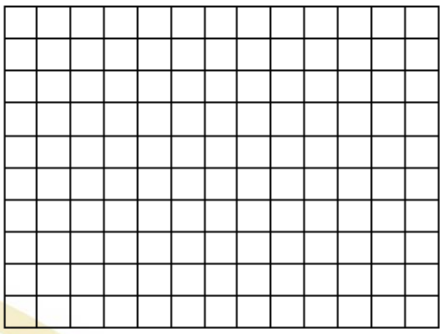
1) Graph the function f : f $(x) = \begin{cases} \frac{1}{x} & \text{when} \quad x < 0 \\ x^2 & \text{when} \quad x \geq 0 \end{cases}$

Then from the graph deduce its range , its domain and mention its type (even, odd or otherwise).

Solu: .....

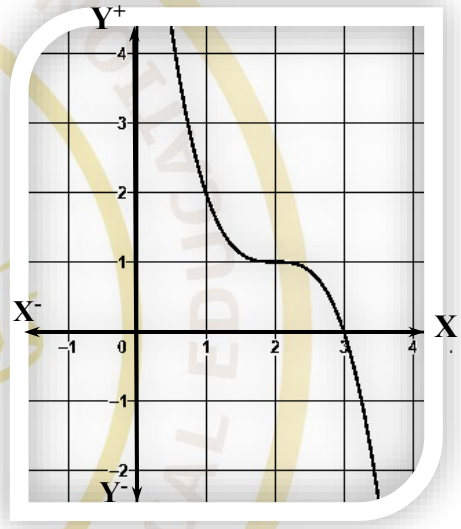
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2) The opposite figure represents the graph of the function $f(x) = a\,(x - b)^3 + c$ Write the rule of the function.

Then deduce its domain, its range and Discuss its monotony



Solu: .....

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3) Find: $\lim_{x \to 1} \frac{x^2 - 1}{x - 1}$

Solu: .....

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4) Find: $\lim_{x \to 2} \frac{x-2}{\sqrt{x-1}-1}$

Solu: .....

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5) ABC is a triangle in which ($\angle A$) = 65° , m($\angle B$) = 50° , the diameter length of its circumcircle equals 10 cm. Find its perimeter.

Solu: .....

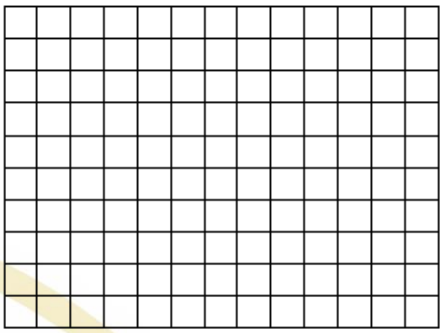
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The third group

1) Graph the function f : f $(x) = \begin{cases} x^3 & \text{when} \quad x < 0 \\ |x| & \text{when} \quad x \geq 0 \end{cases}$



Then from the graph deduce its range , its domain and mention its type (even, odd or otherwise).

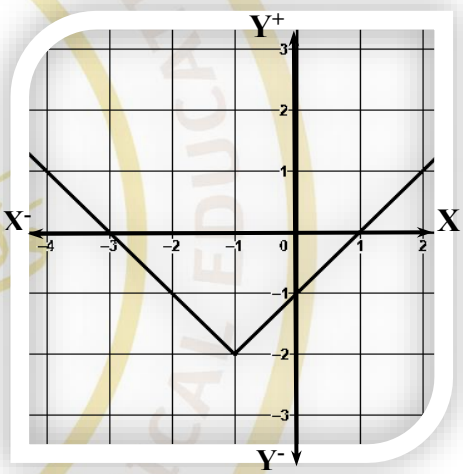
Solu: .....

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2) The opposite figure represents the graph of the function $f(x) = a|x - b| + c$ Write the rule of the function.

Then deduce its domain, its range and Discuss its monotony



Solu: .....

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3) Find: $\lim_{x \to 4} \frac{x^2 - 16}{x - 4}$

Solu: .....

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4) Find: $\lim_{x\to 3} \frac{x-3}{\sqrt{x-2}-1}$

Solu: .....

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5) ABC is a triangle in which ($\angle A$) = 60^o , m($\angle B$) = 45^o , the diameter length of its circumcircle equals 14 cm. Find its perimeter.

Solu: .....

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