



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

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

وتوجيهات رئيس الإدارة المركزية للتعليم العام

د/ هالة عبد السلام خفاجي

إشراف علمي
مستشار الرياضيات
أ/ منال عزقول

أداءات وتقييمات لمنهج الرياضيات البحتة لغات

للفيف الثاني الثانوي "علمي"
الفصل الدراسي الأول
للعام الدراسي ٢٠٢٥ / ٢٠٢٦

الأسبوع الثامن

لجنة الإعداد

أ/ عفاف جاد

أ/ محمد الفار

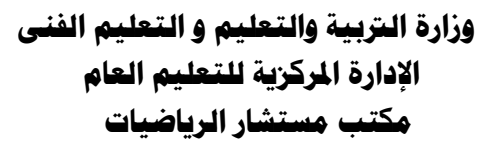
د/ محمد عبد العاطي

ترجمة

أ/ عمرو فاروق

مراجعة الترجمة

أ/ شريف البرهامي



4) Determine the domain of the function $f : f(x) = \frac{x^2 + 4}{\sqrt{2x - 6}}$

Solu:

.....

.....

.....

5) Find in $\mathbb{R}$ the values of x which satisfy positive values for the expression $(|x - 4| - 7)$

Solu:

.....

.....

.....

6) If the function $f : f(x) = x \tan x - \sin^2 x$, then mention if the function is even, odd or otherwise (give reason)

Solu:

.....

.....

.....

7) The opposite figure shows the curves of the functions

$f(x)$, $g(x)$. Find in $\mathbb{R}$ the solution set of the inequality

$f(x) \leq g(x)$

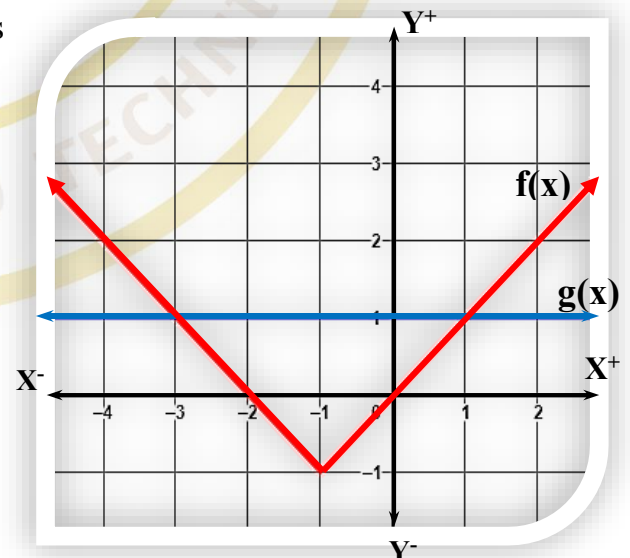
Solu:

.....

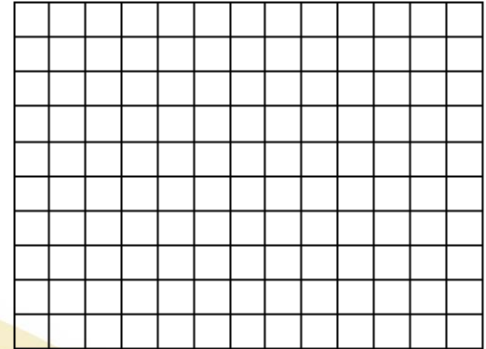
.....

.....

.....



8) Graph the function $f : f(x) = 2 - \frac{1}{x-1}$, from the graph deduce its domain, its range, discuss its monotony and mention if it is one to one or not.



Solu:

.....
.....
.....
.....
.....
.....
.....

Algebra: Exercises on Rational exponents.

9) Find in $\mathbb{R}$ the solution set of the following equation: $(x + 25)^{\frac{4}{3}} = 81$

Solu:

.....
.....
.....
.....
.....
.....
.....
.....

10) Find in $\mathbb{R}$ the solution set of the following equation: $(2x + 3)^{\frac{3}{4}} - 27 = 0$

Solu:

.....
.....
.....
.....
.....
.....
.....
.....



Calculus: Exercises on Limit of a function at infinity

11) Find: $\lim_{x \rightarrow \infty} \left(\frac{x^2 + 3x}{x + 5} - \frac{x^2 + 7}{x + 5} \right)$

Solu:

.....

.....

.....

12) Find: $\lim_{x \rightarrow \infty} (\sqrt{4x^2 - 2x} - 2x)$

Solu:

.....

.....

.....

Exercises on Cosine Rule

13) ABC is a triangle in which: $a = 6$ cm, $c = 10$ cm, $m(\angle B) = 120^\circ$, find the length of b.

Solu:

.....

.....

.....

14) ABC is a triangle in which: $a = 3$ cm, $m(\angle B) = 120^\circ$ and its surface area = $10\sqrt{3}$ cm², find the length of each of c, b.

Solu:

.....

.....

.....

15) ABC is a triangle in which: $\cos A = \frac{2}{5}$, $b = 2.5$ cm and $c = 2$ cm.

Prove that ΔABC is an isosceles triangle

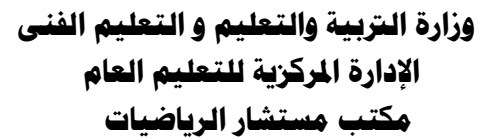
Solu:

.....

.....

.....

.....



Algebra: Exercises on Unit one

Solu:

Solu:

Solu:

.....

.....

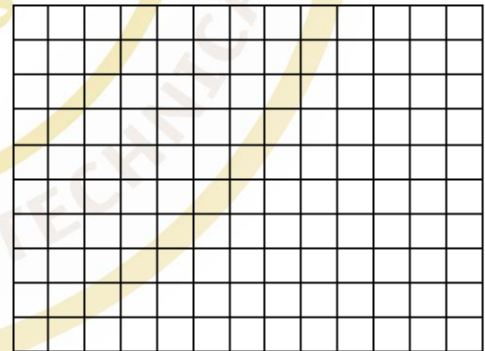
.....

.....

.....

.....

.....





4) Determine the domain of the function $f : f(x) = \frac{x^3 - x + 1}{\sqrt{2x - 2}}$

Solu:

.....

.....

.....

.....

5) Find in $\mathbb{R}$ the values of x which satisfy negative values for the expression $(|x - 4| - 7)$

Solu:

.....

.....

.....

.....

6) If the function $f : f(x) = x \sin x - \cos x$, then mention if the function is even, odd or otherwise (give reason)

Solu:

.....

.....

.....

.....

7) The opposite figure shows the curves of the functions $f(x)$, $g(x)$. Find in $\mathbb{R}$ the solution set of the inequality $f(x) \geq g(x)$

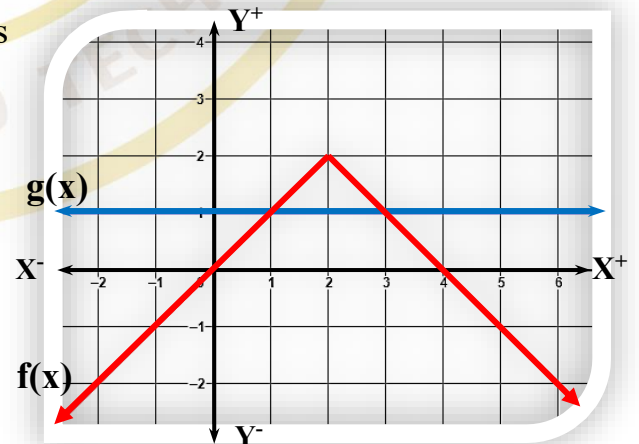
Solu:

.....

.....

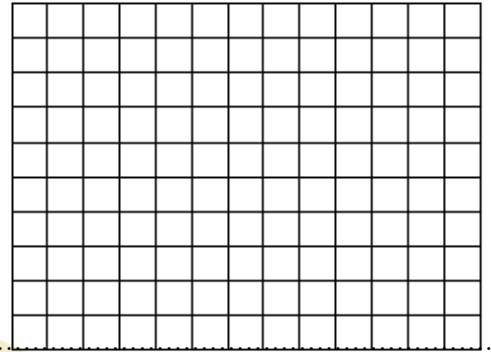
.....

.....





8) Graph the function $f : f(x) = 1 - (x + 1)^3$, from the graph deduce its domain, its range, discuss its monotony and mention if it is one to one or not.



Solu:

.....

.....

.....

.....

Algebra: Exercises on Rational exponents.

9) Find in $\mathbb{R}$ the solution set of the following equation: $(x - 1)^{\frac{4}{3}} = 16$

Solu:

.....

.....

.....

.....

10) Find in $\mathbb{R}$ the solution set of the following equation: $(2x + 3)^{\frac{3}{4}} - 8 = 0$

Solu:

.....

.....

.....

.....

.....

Calculus: Exercises on Limit of a function at infinity

11) Find: $\lim_{x \rightarrow \infty} \left(\frac{x^2 + 4x}{x + 2} - \frac{x^2 + 5}{x + 2} \right)$

Solu:

.....

.....

.....



12) Find: $\lim_{x \rightarrow \infty} (\sqrt{9x^2 + 6x} - 3x)$

Solu:

.....

.....

.....

.....

.....

Exercises on Cosine Rule

13) ABC is a triangle in which: $a = 9$ cm, $c = 15$ cm, $m(\angle B) = 120^\circ$, find the length of b.

Solu:

.....

.....

.....

.....

.....

14) ABC is a triangle in which: $b = 9$ cm, $m(\angle B) = 30^\circ$ and its surface area = 27 cm^2 ,
find the length of each of c , a.

Solu:

.....

.....

.....

.....

.....

15) ABC is a triangle in which: $\cos A = \frac{2}{5}$, $b = 5$ cm and $c = 4$ cm.

Prove that ΔABC is an isosceles triangle

Solu:

.....

.....

.....

.....

.....



8 الرياضيات البحتة لغات - للصف الثاني الثانوي علمي التقييمات الأسبوعية الأسبوع الثامن 8

The First Group

1) Prove that the function $f : f(x) = \frac{3x}{x+2}$ is one to one function

Solu:

.....

.....

2) Find graphically in R the solution set of the following equation , then satisfy the solution algebraically $|x + 4| = 1 - 2x$

Solu:

.....

.....

3) Find in R the solution set of the following equation: $(x + 2)^{\frac{3}{4}} - 1 = 0$

Solu:

.....

.....

4) Find: $\lim_{x \rightarrow \infty} \left(\frac{x^2 + 5x}{x + 3} - \frac{x^2 + 1}{x + 3} \right)$

Solu:

.....

.....

5) ABC is a triangle in which: $a = 12$ cm, $c = 20$ cm, $m(\angle B) = 120^\circ$ find the length of b.

Solu:

.....

.....



The Second Group

1) Prove that the function $f : f(x) = \frac{5x}{x-2}$ is one to one function

Solu:

.....

.....

.....

2) Find graphically in R the solution set of the following equation , then satisfy the solution algebraically $|x - 3| = 3 - 2x$

Solu:

.....

.....

.....

3) Find in R the solution set of the following equation: $(x + 15)^{\frac{3}{4}} - 8 = 0$

Solu:

.....

.....

.....

4) Find: $\lim_{x \rightarrow \infty} \left(\frac{x^2 + 4}{x + 6} - \frac{x^2 - 3x}{x + 6} \right)$

Solu:

.....

.....

.....

.....

5) ABC is a triangle in which: $a = 15$ cm, $c = 25$ cm, $m(\angle B) = 120^\circ$ find the length of b.

Solu:

.....

.....

.....



The Third Group

1) Prove that the function $f : f(x) = \frac{4x}{x+3}$ is one to one function

Solu:
.....
.....

2) Find graphically in R the solution set of the following equation, then satisfy the solution algebraically $|x - 6| = 3 - 2x$

Solu:
.....
.....

3) Find in R the solution set of the following equation: $(x + 8)^{\frac{3}{4}} - 27 = 0$

Solu:
.....
.....

4) Find: $\lim_{x \rightarrow \infty} \left(\frac{x^2 + 9}{x + 4} - \frac{x^2 - 5x}{x + 4} \right)$

Solu:
.....
.....

5) ABC is a triangle in which: $a = 18$ cm, $c = 30$ cm, $m(\angle B) = 120^\circ$ find the length of b.

Solu:
.....
.....