



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

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

ونوجيهات رئيس الإدارة المركزية للتعليم العام
المشرف على مسنشارى المواد الدراسية

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إشراف علمي
مسنشار الرياضيات
أ / منال عزقول

إداءات و نقييمات لمنهج الرياضيات البحتة لغات

للصف الثانى الثانوي " علمى "
الفصل الدراسى الثانى
للعام الدراسى ٢٠٢٥ / ٢٠٢٦

الاسبوع العاشر

إعداد

أ / إيهاب فنحى أ / محمد الفار أ / محمود سلاى

ترجمة

أ / عمرو فاروق محمود

مراجعة الترجمة

أ / عثمان مصطفى عثمان أ / محمود درويش



⑩ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفى الأسبوع العاشر ⑩

First: Algebra:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{2} + \frac{1}{4} + \dots$

Solu:

2) A geometric sequence in which its first term is equal to the sum of the next terms up to infinity, find its common ratio.

Solu:

3) A geometric sequence, all terms are positive, the sum of its first and second terms equals 12 and its third term equals 1, show that it is possible to find the sum of its terms up to infinity, then find this sum.

Solu:

4) Find $\sum_{r=1}^{\infty} 49 \left(\frac{2}{7}\right)^r$

Solu:



Second: Calculus and integration:

5) Show that each of the two functions f_1, f_2 such that $f_1(x) = x^4 + 3x + 1$,
 $f_2(x) = x^4 + 3x + 1$ is an anti-derivative of the function $f: f(x) = 4x^3 + 3$

Solu:

6) Write a function that could be anti-derivative of the function $f: f(x) = 6x$

Solu:

7) Show that the function $t: t(x) = x^3 + 5x - 1$ is an anti-derivative of the function
 $f: f(x) = 3x^2 + 5$

Solu:

8) Verify the validity of the relation: $\int 8x(1 + x^2)^3 dx = (1 + x^2)^4 + c$
(c is a constant)

Solu:

Third: Trigonometry:

9) If θ is a positive acute angle, such that $\sin \theta = \frac{3}{5}$, then find $\cos 2\theta$ and $\sin \frac{1}{2}\theta$

Solu:

10) If θ is a positive acute angle, such that $\cos 2\theta = \frac{1}{8}$, then find $\tan \theta$

Solu:



⑩ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلى الأسبوع العاشر ⑩

First: Algebra:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{3} + \frac{1}{9} + \dots$

Solu:

2) An infinite geometric sequence in which its first term is equal 18 and its fourth term equals $\frac{16}{3}$, find its sum.

Solu:

3) Find the geometric sequence in which the first term increases its second term by 64 and the sum of its terms up to infinity equals 256.

Solu:

4) Find $\sum_{r=1}^{\infty} 5 \left(\frac{3}{5}\right)^r$

Solu:



Second: Calculus and integration:

5) Show that each of the two functions f_1, f_2 such that $f_1(x) = x^5 + 4x^2 + 3$,
 $f_2(x) = x^5 + 4x^2 - 6$ is an anti-derivative of the function $f: f(x) = 5x^4 + 8x$

Solu:

6) Write a function that could be anti-derivative of the function $f: f(x) = 4x^3$

Solu:

7) Show that the function $t: t(x) = x^2 - x - 1$ is an anti-derivative of the function
 $f: f(x) = 2x - 1$

Solu:

8) Verify the validity of the relation: $\int \frac{x}{\sqrt{x^2 + 1}} dx = \sqrt{x^2 + 1} + c$: (c is a constant)

Solu:

Third: Trigonometry:

9) If θ is a positive acute angle, such that $\sin \theta = \frac{5}{13}$, then find $\cos 2\theta$ and $\sin \frac{1}{2}\theta$

Solu:

10) If θ is a positive acute angle, such that $\cos 2\theta = \frac{1}{4}$, then find $\tan \theta$

Solu:



⑩ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي التقييمات الأسبوعية الأسبوع العاشر ⑩

The first group:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{4} + \frac{1}{8} + \dots$

Solu:

2) Find $\sum_{r=1}^{\infty} 6 \left(\frac{2}{3}\right)^r$

Solu:

3) Show that the function $t: t(x) = x^2 - x - 1$ is an anti-derivative of the function $f: f(x) = 2x - 1$

Solu:

4) Verify the validity of the relation: $\int (1 + \sin x) dx = x - \cos x + c$
(c is a constant)

Solu:

5) If θ is a positive acute angle, such that $\sin \theta = \frac{1}{3}$, then find $\cos 2\theta$

Solu:



The second group:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{5} + \frac{1}{25} + \dots$

Solu:

2) Find $\sum_{r=1}^{\infty} 12 \left(\frac{1}{3}\right)^r$

Solu:

3) Show that the function $t: t(x) = x^3 - 5x - 1$ is an anti-derivative of the function $f: f(x) = 3x^2 - 5$

Solu:

4) Verify the validity of the relation: $\int (1 + \cos x) dx = x + \sin x + c$
(c is a constant)

Solu:

5) If θ is a positive acute angle, such that $\cos \theta = \frac{1}{8}$, then find $\cos 2\theta$

Solu:



The third group:

1) Find the sum of the infinite geometric series: $1 + \frac{1}{6} + \frac{1}{36} + \dots$

Solu:

2) Find $\sum_{r=1}^{\infty} 5 \left(\frac{3}{5}\right)^r$

Solu:

3) Show that the function $t: t(x) = x^5 + 1$ is an anti-derivative of the function
 $f: f(x) = 5x^4$

Solu:

4) Verify the validity of the relation: $\int (1 + \sec^2 x) dx = x + \tan x + c$
(c is a constant)

Solu:

5) If θ is a positive acute angle, such that $\cos \theta = \frac{1}{4}$, then find $\cos 2\theta$

Solu: