



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

أداءات و تقييمات لمنهج الرياضيات البحتة لفات

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

الاسبوع الحادى عشر

إعداد

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

ترجمة

أ / عمرو فاروق محمود

مراجعة الترجمة

أ / عثمان مصطفى عثمان أ / محمود درويش



⑪ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء الصفى الأسبوع الحادى عشر ⑪

First: Algebra:

- 1) If $(4, b, c)$ form an arithmetic sequence and $(2, b+3, 5c)$ form a geometric sequence , then find each of b and c

Solu:

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

Solu:

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- 3) A geometric sequence, the sum of its first three terms equals 35 and the sum of the next three terms is 280, find this sequence.

Solu:

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Second: Calculus and integration:

- 4) Find: $\int x (3 - 5 x) dx$

Solu:

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- 5) Find: $\int (5 - 2 x)^4 dx$

Solu:

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6) Find: $\int x \sqrt{x^2 + 5} dx$

Solu:

7) Find: $\int (3x - \sec^2 x) dx$

Solu:

8) Find: $\int (5 \sin x + \cos 4x) dx$

Solu:

Third: Trigonometry:

9) A ship starts to move from a certain point in direction 70° east of south with velocity 12 km/hr., at the same moment another ship start moving in direction 55° north of east with velocity 5 km/hr. find the distance between the two ships after two hours from starting motion to the nearest two decimals.

Solu:

10) If $\sin A = \frac{4}{5}$, $A \in]0, \frac{\pi}{2}[$, $\cot B = \frac{5}{12}$, $B \in]\pi, \frac{3\pi}{2}[$ then find without using the calculator $\tan (A-B)$ and $\sin 2A$

Solu:



⑪ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي الأداء المنزلي الأسبوع الحادي عشر ⑪

First: Algebra:

1) If $(\frac{1}{2}a, b, c)$ form a geometric sequence, then prove that $4b < a + 2c$

Solu:

2) A geometric sequence in which its third term is the multiplicative inverse of its first term and its fifth term is $\frac{1}{125}$, prove that there are two solutions and find them.

Solu:

3) T_n is a geometric sequence with positive terms, $T_2 = 6$ and $T_3 - T_1 = 9$, find the sequence and the sum of its first 12 terms.

Solu:

Second: Calculus and integration:

4) Find: $\int (x - 3x^2)^2 dx$

Solu:

5) Find: $\int \frac{\sqrt{x+3}}{x^2+6x+9} dx$

Solu:



6) Find: $\int (x - 1)(x^2 - 2x + 3)^{-5} dx$

Solu:

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7) Find: $\int (1 + x + \tan^2 x) dx$

Solu:

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8) Find: $\int (2 \sin x + \cos 3x) dx$

Solu:

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Third: Trigonometry:

9) If A, B, C are measures of angles of a triangle such that $\tan B = \frac{4}{3}$ and $\tan C = 7$,
prove that $A = 45^\circ$

Solu:

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10) If $\sin \theta = \frac{-4}{5}$, $180^\circ < \theta < 270^\circ$ then find without using the calculator $\cos \frac{\theta}{2}$

Solu:

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⑪ الرياضيات البحتة لغات - للصف الثاني الثانوي علمي - التقييمات الأسبوعية - الأسبوع الحادي عشر ⑪

The first group:

- 1) An infinite geometric sequence in which any term equals three times the sum of the next terms up to infinity, and its fifth term is 1. find this sequence.

Solu:

- 2) Find the number of terms of the geometric sequence in which the sum of its terms is $121 \frac{4}{9}$ and its first term 81 and its last term is $\frac{1}{9}$

Solu:

- 3) Find: $\int (3 - x + \sec x \tan x) dx$

Solu:

- 4) Find: $\int 8x \sqrt{4x^2 + 1} dx$

Solu:

- 5) If θ is a positive acute angle, such that $\sin \theta = \frac{1}{6}$, then find $\sin 2\theta$ and $\cos 2\theta$

Solu:



The second group:

- 1) An infinite geometric sequence in which any term equals three times the sum of the next terms up to infinity, and its fourth term is 1. find this sequence.

Solu:

- 2) Find the number of terms of the geometric sequence in which the sum of its terms is $364 \frac{4}{9}$ and its first term $\frac{1}{9}$ and its last term is 243.

Solu:

- 3) Find: $\int (3 + x^2 + \sin 5x) dx$

Solu:

- 4) Find: $\int 10x \sqrt{5x^2 + 1} dx$

Solu:

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

Solu:



The third group:

- 1) An infinite geometric sequence in which any term equals four times the sum of the next terms up to infinity, and its fourth term is 1. find this sequence.

Solu:

- 2) Find the number of terms of the geometric sequence in which the sum of its terms is $2730 \frac{5}{8}$ and its first term $\frac{1}{8}$ and its last term is 2048.

Solu:

- 3) Find: $\int (3 - x + \cos 7x) dx$

Solu:

- 4) Find: $\int 3x \sqrt{x^2 + 1} dx$

Solu:

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

Solu: