



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

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

وتوجيهات رئيس الإدارة المركزية للتعليم العام

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إشراف علمي  
مستشار الرياضيات  
**أ/ منال عزقول**

**أداءات وتقييمات لمنهج الرياضيات**

للفصل الأول الثانوي **لغات**  
الفصل الدراسي الأول  
للعام الدراسي 2025 / 2026

**الأسبوع السادس**

لجنة الإعداد

**أ/ إيهاب فتحى      أ/ عصام الجزار      أ/ عبير نجاح      أ/ عفاف جاد**

ترجمة

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مراجعة

**أ/ شريف البرهامي**

⑥ الرياضيات لغات      للصف الأول الثانوي      الأداء الصفی      الأسبوع السادس ⑥

- (1) Without solving the equation find the sum and the product of the two roots of the following equations:
- a)  $3x^2 + 7x - 12 = 0$   
b)  $2x^2 - 18 = x$   
c)  $(x - 3)(x + 3) = 0$
- (2) If the product of the two roots of the equation:  
 $3x^2 + 8x - k = 0$  equals 4, find the value of  $k$ .
- (3) If the sum of the two roots of the equation:  
 $6x^2 - kx - 10 = 0$  equals  $\frac{1}{6}$ , find the value of  $k$ .
- (4) If  $(3 + i)$  is one of the roots of the equation:  $x^2 + kx + m = 0$ ,  
where  $k, m$  are two real numbers non-zero.  
Find First: the value of the other root.  
Second: the value of  $k$  and  $m$
- (5) If one of the roots of the equation:  $ax^2 - 3x + 2 = 0$   
is the multiplicative inverse of the other root find the value of  $a$ .
- (6) If one of the roots of the equation:  $x^2 - (k - 3)x = -5$   
is the additive inverse of the other root, find the value of  $k$ .
- (7) If  $x = 1$  is one of the roots of the equation:  $x^2 - 4x + k = 0$   
Find: First: the value of  $k$   
Second: the value of the second root.



- (8) Find the value of:  $3\sin 30^\circ \sin^2 60^\circ - \cos 0^\circ \sec 60^\circ + \sin 270^\circ \cos^2 45^\circ$
- (9) Prove that: a)  $1 - 2\sin^2 90^\circ = \cos 180^\circ$     b)  $\cos \frac{\pi}{2} = \cos^2 \frac{\pi}{4} - \sin^2 \frac{\pi}{4}$
- (10) Without using the calculator prove that:  
 $\sin 60^\circ \cos 30^\circ - \sin^2 45^\circ = \cos 60^\circ \sin 30^\circ$
- (11) If  $\sin \alpha = \frac{3}{5}$ , where  $\alpha$  is the smallest positive angle,  
 $\tan \theta = \frac{5}{12}$ , where  $180^\circ < \theta < 270^\circ$ , find the value of the expression:  
 $\sin \alpha \cos \theta - \cos \alpha \sin \theta$
- (12) If the side lengths of triangle ABC are 10 cm, 15 cm, 20 cm, and the lengths of the corresponding sides of triangle XYZ are 6 cm, 9 cm, 12 cm respectively, find the ratio between:  
First: their perimeters                      second: their areas
- (13) If the lengths of two corresponding sides of two similar polygons are 3 cm, 4 cm, and the area of the smaller polygon equals  $135 \text{ cm}^2$ , find the area of the greater one.
- (14) If the ratio between the areas of two similar polygons is 16 : 25 and the difference between their perimeters is 20 cm, find the perimeter of each of them.
- (15) Two farms in the shape of two similar polygons, the ratio between the lengths of two corresponding sides is 5 : 3, if the area of greater farm increases than the smaller farm by 32 faddan, then find the area of each of them.

⑥ الرياضيات لغات      للصف الأول الثانوي      الأداء المنزلي      الأسبوع السادس      ⑥

- (1) Without solving the equation find the sum and the product of the two roots of the following equations:

$$x^2 - 5x - 6 = 0$$

$$4x^2 - 8x = 9$$

$$2(x + 5)(x + 2) = 0$$

- (2) Find the value of  $k$  that makes one of the roots of the equation:

$$x^2 + (k - 1)x - 3 = 0$$
 is the additive inverse of the other root.

- (3) Find the value of  $k$  that makes one of the two roots of the equation:

$$4kx^2 + 7x + k^2 + 4 = 0$$
 is the multiplicative inverse of the other root.

- (4) If  $x = 2$  is one of the roots of the equation:  $ax^2 - 5x + a = 0$

Find: first: the value of  $a$ .      Second: the value of the second root.

- (5) If 2, 5 are the two roots of the equation:  $x^2 + ax + b = 0$  ,  
then find the value of  $a, b$ .

- (6) If  $\sqrt{3}i, -\sqrt{3}i$  are the two roots of the equation:  $x^2 + ax + b = 0$  ,  
find the value of  $a, b$ .

- (7) If  $x = 3$  is one of the roots of the equation:  $x^2 - kx + 6 = 0$

first: Find the value of  $k$       second: Find the value of the other root





- (8) Find the value of:  $\cos 30^\circ \sin 60^\circ + \cos 60^\circ \sin 30^\circ + \sec 45^\circ \tan 0^\circ$
- (9) Prove that:  $3 \sin 60^\circ \tan 60^\circ - 4 = 2 \sec 45^\circ \csc 45^\circ + \sin 30^\circ - 8 \cos 60^\circ$
- (10) Find the value of the expression:  $\cos \frac{\pi}{2} \cos 0 + \sin \frac{3\pi}{2} \sin \frac{\pi}{2}$ .
- (11) If  $\sin \alpha = \frac{1}{2}$ , where  $\alpha$  is the smallest positive angle,  
 $\tan \theta = \frac{\sqrt{3}}{2}$ , where  $180^\circ < \theta < 270^\circ$   
Find the value of the expression:  $\sin \alpha \cos \theta + \cos \alpha \sin \theta$ .
- (12) If the ratio between the areas of two similar triangles is 4 : 9,  
first: find the ratio between the lengths of two corresponding sides  
Second: if the perimeter of the larger triangle is 90 cm,  
find the perimeter of the smaller triangle.
- (13) The two polygons ABCD, XYZL are similar,  $3XY = 4AB$ , if the area of the polygon ABCD equals  $18 \text{ cm}^2$ , find the area of the polygon XYZL.
- (14) The ratio between the perimeters of two similar polygons is 4 : 5, and the area of the greater polygon is  $100 \text{ cm}^2$ , find the area of the smaller one.
- (15) Two similar polygons the sum of their areas is  $169 \text{ cm}^2$ , and the ratio between their perimeters is 2 : 3, find the area of each of them.