



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 التاسع

لجنة الإعداد

أ/ عفاف جاد

أ/ إيهاب فتحى

أ/ عصام الجزار

ترجمة

أ/ محاسب على

مراجعة

أ/ شريف البرهامى



9 الرياضيات لغات للصف الأول الثانوي الأداء الصفی الأسبوع التاسع 9

- (1) Form the quadratic equation of roots $\frac{2}{i}, \frac{2+2i}{1-i}$
- (2) If one of the roots of the equation : $3x^2 - (k + 2)x + k^2 + 2k = 0$ is the additive inverse of the other root. Find the value of k .
- (3) If L, m are the two roots of the equation: $x^2 - 7x + 3 = 0$, find the quadratic equation of roots $2L + 3, 2m + 3$.
- (4) Graph the curve of the function: $y = \frac{1}{2} \sin x$, where $x \in [0, 2\pi]$.
- (5) Graph the curve of the function: $y = \cos x$, where $x \in [0, 2\pi]$.
- (6) Complete the following statement to be true:
 - (a) The range of the function $f: f(\theta) = \cos \theta$ is
 - (b) The range of the function $f: f(\theta) = 4 \sin \theta$ is
 - (c) The maximum value of the function $f: f(\theta) = 3 \cos \theta$ is
 - (d) The maximum value of the function $f: f(\theta) = 2 \sin \theta$ is
- (7) Find the maximum, and minimum values of the following functions then deduce the range of each:
 - (a) $f(\theta) = \sin \theta$
 - (b) $f(\theta) = 5 \cos \theta$.

(8) In the opposite figure:

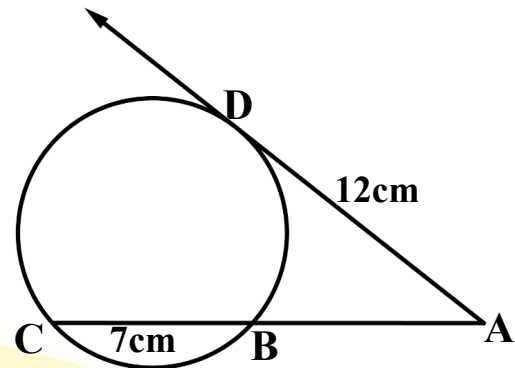
A is a point outside a circle,

$\overrightarrow{AD}$ is a tangent to the circle

$\overline{AC}$ intersects the circle at B, C

$AD = 12\text{cm}$, $BC = 7\text{cm}$

Find the length of $\overline{AB}$.



(9) In the opposite figure:

A is a point outside a circle,

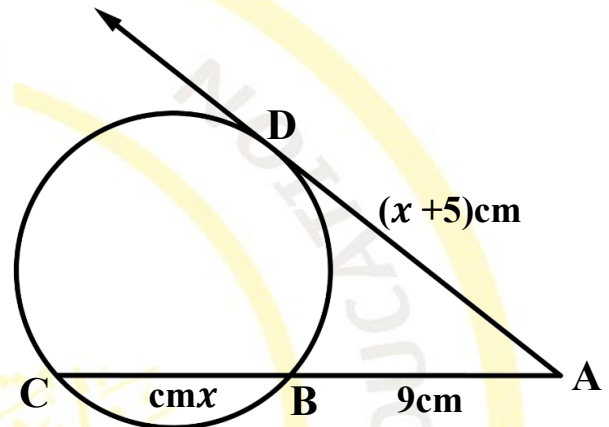
$\overrightarrow{AD}$ is a tangent to the circle

$\overline{AC}$ intersects the circle at B, C

$AD = (x + 5)\text{cm}$,

$AB = 9\text{cm}$

Find the length of $\overline{BC}$.



(10) In the opposite figure:

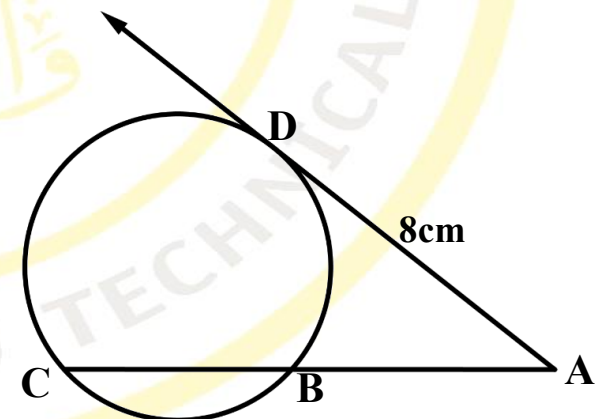
A is a point outside a circle,

$\overrightarrow{AD}$ is a tangent to the circle

$\overline{AC}$ intersects the circle at B, C

$AD = 8\text{cm}$, $AB : AC = 1 : 2$

Find the length of $\overline{AB}$.



(11) In the opposite figure:

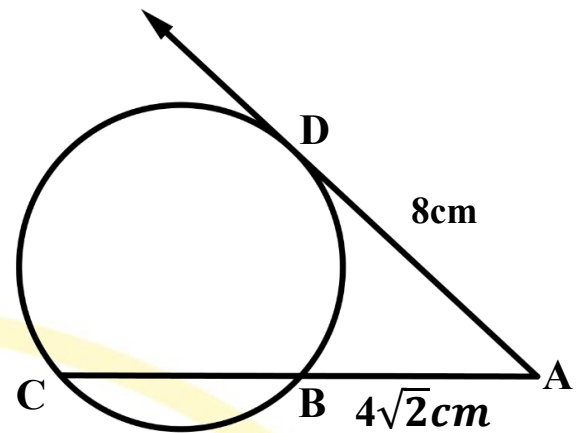
A is a point outside a circle,

$\overrightarrow{AD}$ is a tangent to the circle

$\overline{AC}$ intersects the circle at B, C,

$AB = 4\sqrt{2}\text{cm}$, $AD = 8\text{cm}$

Prove that $AB = BC$.



(12) In the opposite figure:

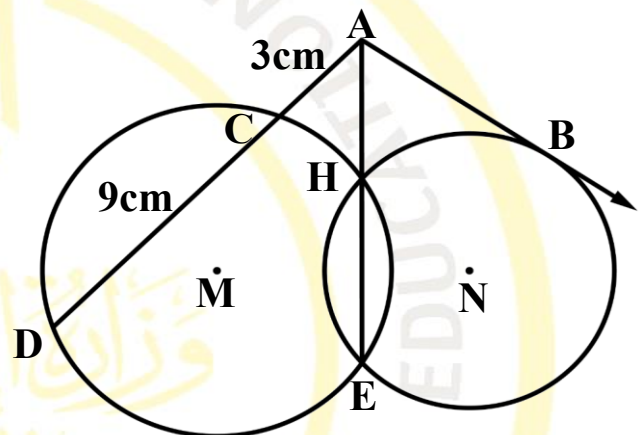
Two intersecting circles M, N

at E, H, $\overrightarrow{AB}$ is a tangent

to circle N, $\overline{AD}$ intersects

circle M at C, D, $AC = 3\text{cm}$,

$CD = 9\text{cm}$, find the length of $\overline{AB}$



(13) ABC is a triangle, $D \in \overline{AC}$ where $AD = 2\text{cm}$, $DC = 6\text{cm}$.

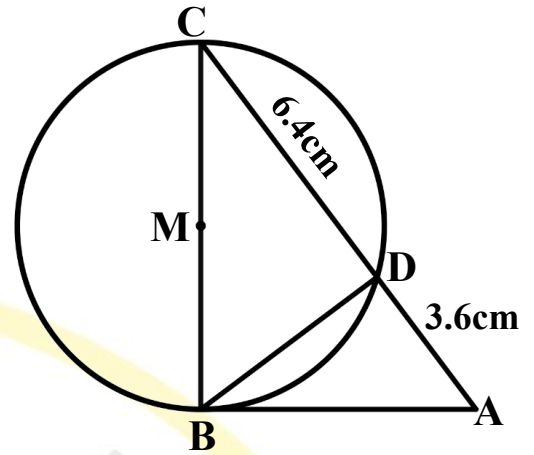
If $AB = 4\text{ cm}$. Prove that $\overline{AB}$ is a tangent to the circle passes by C, B, D

(14) In the opposite figure:

$\overline{BC}$ is a diameter of circle M
, A is a point outside the circle,
 $\overline{AC}$ is drawn to intersect the
circle at C and D, $DC = 6.4\text{cm}$,
 $AD = 3.6\text{cm}$.

$\overline{AB}$ is a tangent to the circle.

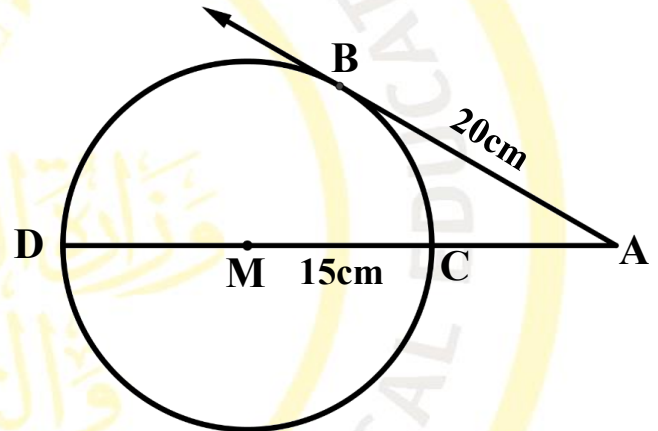
Find the length of the diameter of the circle



(15) In the opposite figure:

$\overline{DC}$ is a diameter of circle M
 $\overline{AB}$ is a tangent to the circle
 $AB = 20\text{cm}$, $MC = 15\text{cm}$.

Find the length of $\overline{AC}$



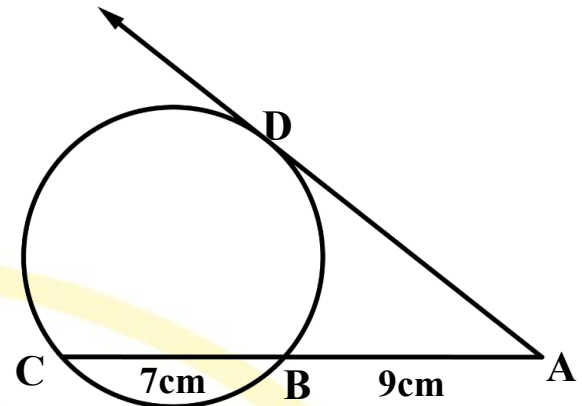


9 الرياضيات لغات للصف الأول الثانوي الأداء المنزلي الأسبوع التاسع 9

- 1) Form the quadratic equation of roots: $3 - 2\sqrt{2}i$, $3 + 2\sqrt{2}i$
- 2) If the product of the roots of the equation: $2x^2 + 7x + 3k = 0$
equals the sum of the roots of the equation: $x^2 - (k + 4)x = 0$,
find the value of k .
- 3) If L, M are the two roots of the equation: $x^2 - 7x + 3 = 0$,
find the quadratic equation of roots $L + 3, M + 3$.
- 4) Graph the curve of the function: $y = 2\sin x$, where $x \in [0, 2\pi]$.
- 5) Graph the curve of the function: $y = 3\cos x$, where $x \in [0, 2\pi]$.
- 6) Complete the following statement to be true:
 - (a) The range of the function $f: f(\theta) = \sin\theta$ is
 - (b) The range of the function $f: f(\theta) = \cos\theta$ is
 - (c) The maximum value of the function $f: f(\theta) = 4\sin\theta$ is
 - (d) The maximum value of the function $f: f(\theta) = 3\cos\theta$ is
- 7) Find the maximum, and minimum values of the following functions then deduce the range of each:
 - (a) $f(\theta) = \cos\theta$
 - (b) $f(\theta) = \frac{3}{2} \sin\theta$

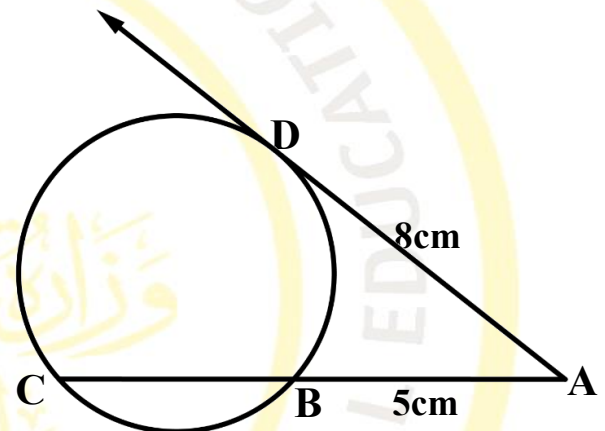
8) In the opposite figure:

A is a point outside a circle,
 $\overrightarrow{AD}$ is a tangent to the circle
 $\overrightarrow{AC}$ intersects the circle at B, C
 $AB = 9\text{cm}$, $BC = 7\text{cm}$
 Find the length of $\overrightarrow{AD}$.



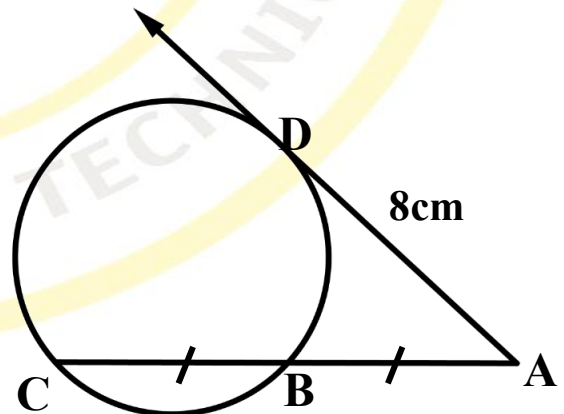
9) In the opposite figure:

A is a point outside a circle,
 $\overrightarrow{AD}$ is a tangent to the circle
 $\overrightarrow{AC}$ intersects the circle at B, C
 $AD = 8\text{cm}$, $AB = 5\text{cm}$
 Find the length of $\overrightarrow{BC}$.



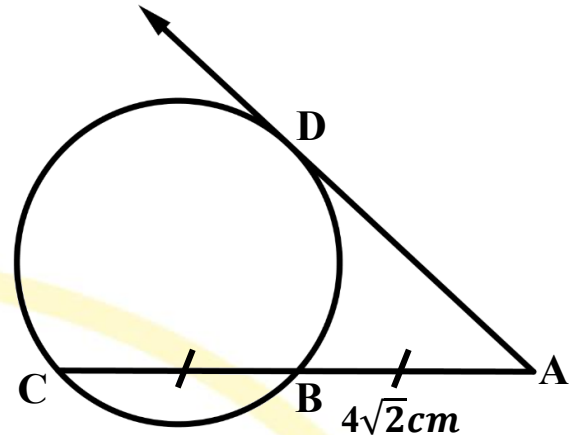
10) In the opposite figure:

A is a point outside a circle,
 $\overrightarrow{AD}$ is a tangent to the circle
 $\overrightarrow{AC}$ intersects the circle at B, C
 $AD = 8\text{cm}$, $AB = BC$
 Find the length of $\overrightarrow{AB}$.



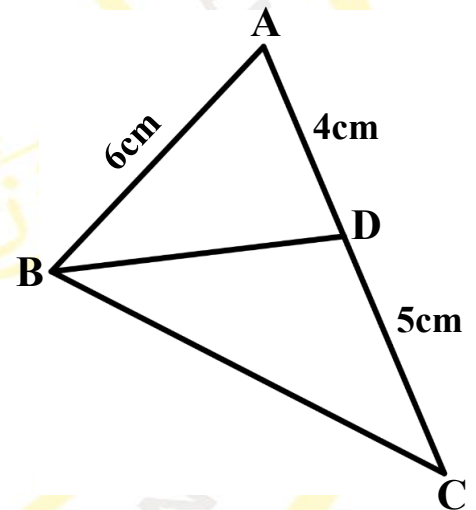
11) In the opposite figure:

A is a point outside a circle,
 $\overrightarrow{AD}$ is a tangent to the circle
 $\overrightarrow{AC}$ intersects the circle at B, C,
 $AB = BC = 4\sqrt{2}\text{cm}$
Find the length of $\overrightarrow{AD}$.



12) In the opposite figure:

ABC is a triangle in which $AB = 6\text{ cm}$
 $D \in \overline{AC}$ where $AD = 4\text{cm}$, $DC = 5\text{cm}$
Prove that $\overline{AB}$ is a tangent to the
circle passing by C, B, D



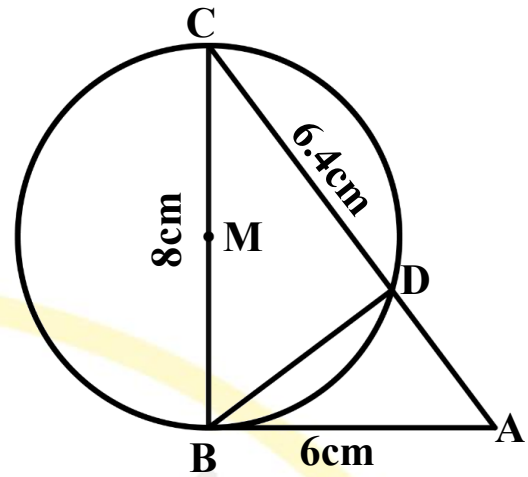
13) ABC is a triangle, $D \in \overline{BC}$, where $BD = 5\text{cm}$, $DC = 4\text{cm}$.
If $AC = 6\text{ cm}$. Prove that $\overline{AC}$ is a tangent to the circle
passing by A, B, D

14) In the opposite figure:

$\overline{BC}$ is a diameter of circle M of length 8cm, A is a point outside the circle, $\overline{AC}$ is drawn to intersect the circle at D, $DC = 6.4\text{cm}$, $AB = 6\text{cm}$.

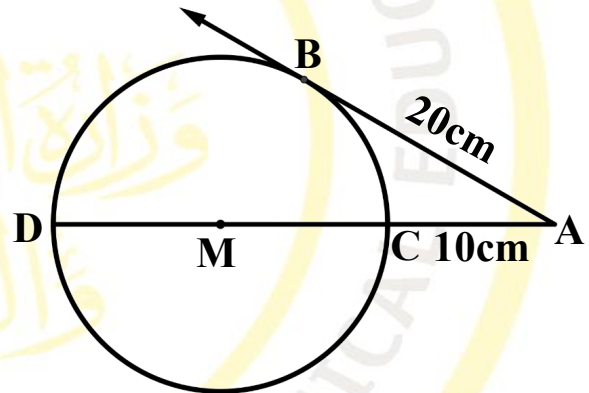
Prove that:

$\overline{AB}$ is a tangent to the circle M.



15) In the opposite figure:

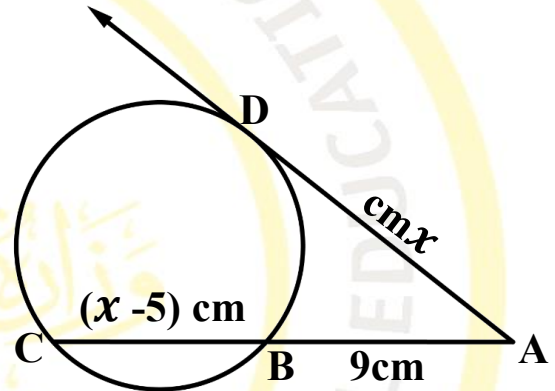
$\overline{BC}$ is a diameter of circle M
 $\overline{AB}$ is a tangent to the circle
 $AB = 20\text{cm}$, $AC = 10\text{cm}$.
Find the radius length of the circle M.



First Group

- (1) If L, M are the two roots of the equation $x^2 - 8x + 3 = 0$,
find the quadratic equation of roots: $L^2 + 1, M^2 + 1$.
- (2) Find the maximum, and minimum values of the function: $y = 3\sin x$,
then deduce its range.
- (3) Find the maximum, and minimum values of the function: $y = 2\cos x$,
then deduce its range.

- (4) In the opposite figure:
A is a point outside a circle,
 $\overrightarrow{AD}$ is a tangent to the circle
 $\overline{AC}$ intersects the circle at B, C
 $AB = 9\text{cm}$, $BC = (x - 5)\text{cm}$
 $AD = x\text{ cm}$, find the numerical
value of x

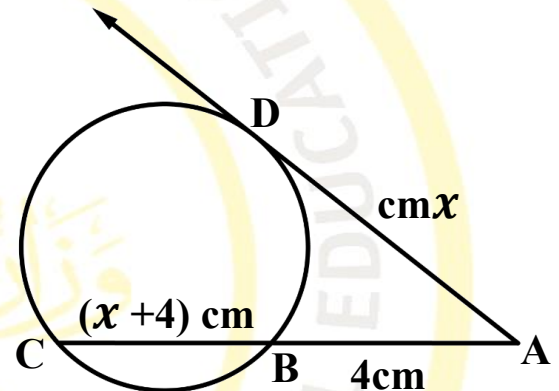


- (5) ABD is a triangle, $C \in \overline{AD}$ where $AC = 4\text{cm}$, $DC = 12\text{cm}$
If $AB = 8\text{ cm}$. Prove that $\overline{BA}$ is a tangent to the circle passes
by C, B, D.

Second Group

- (1) If L, M are the two roots of the equation $x^2 - 6x + 4 = 0$,
find the quadratic equation of roots: $L^2 + 2, M^2 + 2$
- (2) Find the maximum, and minimum values of the function: $y = 4\sin x$,
then deduce its range.
- (3) Find the maximum, and minimum values of the function: $y = 3\cos x$,
then deduce its range.

- (4) In the opposite figure:
A is a point outside a circle,
 $\overline{AD}$ is a tangent to the circle
 $\overline{AC}$ intersects the circle at B, C
 $AB = 4\text{cm}$, $BC = (x + 4)\text{cm}$
 $AD = x \text{ cm}$,
find the numerical value of x

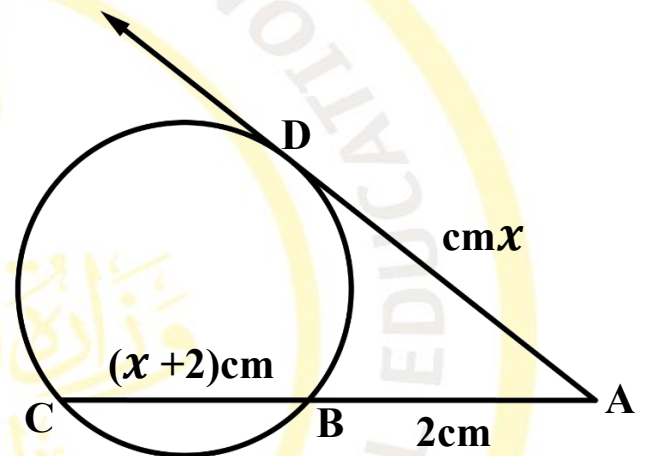


- (5) ABC is a triangle, $D \in \overline{BC}$, where $DC = 5 \text{ cm}$, $DB = 15 \text{ cm}$
If $AC = 10 \text{ cm}$. Prove that $\overline{AD}$ is a tangent to the circle passes
by B, A, D.

Third Group

- (1) If L, M are the two roots of the equation: $x^2 - 6x + 4 = 0$,
find the quadratic equation of roots: $L^2 + 3, M^2 + 3$
- (2) Find the maximum, and minimum values of the function: $y = 5\sin x$,
then deduce its range.
- (3) Find the maximum, and minimum values of the function: $y = 4\cos x$,
then deduce its range.

- (4) In the opposite figure:
A is a point outside a circle,
 $\overline{AD}$ is a tangent to the circle
 $\overline{AC}$ intersects the circle at B, C
 $AB = 4\text{cm}$, $BC = (x + 2)\text{cm}$
 $AD = x \text{ cm}$,
find the numerical value of x



- (5) ABC is a triangle, $D \in \overline{BC}$, where $DC = 7 \text{ cm}$, $DB = 9 \text{ cm}$.
If $AB = 12 \text{ cm}$ Prove that $\overline{AD}$ is a tangent to the circle passes
by C, A, D.