



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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مستشار الرياضيات
أ/ منال عزقول

أداءات وتقييمات لمنهج الرياضيات

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

الأسبوع الرابع

لجنة الإعداد

أ/ إيهاب فتحى أ/ عبير نجاح أ/ عفاف جاد

أ/ عصام الجزار أ/ نفيسة رمضان

ترجمة

أ/ محسب على

مراجعة

أ/ شريف البرهامي



4 الرياضيات لغات للصف الأول الثانوي الأداء الصفى الأسبوع الرابع 4

(1) Determine the type of the roots of each of the following equations:

a) $x^2 - 10x + 25 = 0$

b) $x^2 - 2x + 5 = 0$

c) $12x - 4x^2 = 9$

d) $x(x - 2) = 5$

(2) Prove that the roots of the equation: $x^2 - 11x + 5 = 0$,
are complex and not real, and then by using the general formula
find these two roots.

(3) Find the real value of k , which makes the two roots of the equation:
 $4x^2 - 12x + k = 0$ are equal, then find this two roots.

(4) If l, m are two rational numbers, prove that the two roots of the equation:
 $lx^2 + (l - m)x - m = 0$ are rational numbers.

(5) Find the real values of the number k which satisfy that the equation:
 $(k - 1)x^2 - 2kx + k = 0$ has no real roots.

(6) Find the length of the arc in a circle of radius length 6 cm. which opposite
to a central angle of measure $\frac{7\pi}{6}$ to the nearest two decimal place.

(7) Find the length of the radius of a circle, which has a central angle of
measure $\frac{9\pi}{8}$ and opposite to an arc of length 24 cm. to the nearest one
decimal place.

(8) Find the degree measure (degree, minute, second) to the angle of measure 1.2 radian.

(9) Find the degree and the radian measure of a central angle opposite to an arc of length (L) in a circle of length (r) in the following cases:

a) $L = 10$ cm, $r = 8$ cm

b) $L = \pi$ cm, $r = 6$ cm

(10) In the opposite figure:

ABC is a triangle, $D \in \overline{AB}$, $E \in \overline{AC}$,

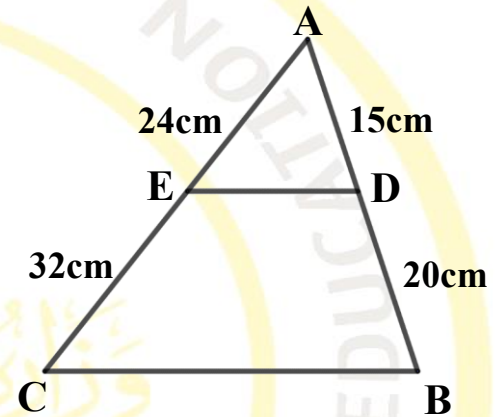
$AD = 15$ cm, $AE = 24$ cm,

$DB = 20$ cm, $EC = 32$ cm,

Prove that:

First: $\triangle ADE \sim \triangle ABC$

Second: $\overline{DE} \parallel \overline{BC}$



(11) In the opposite figure:

$\overline{AB} \cap \overline{CD} = \{E\}$

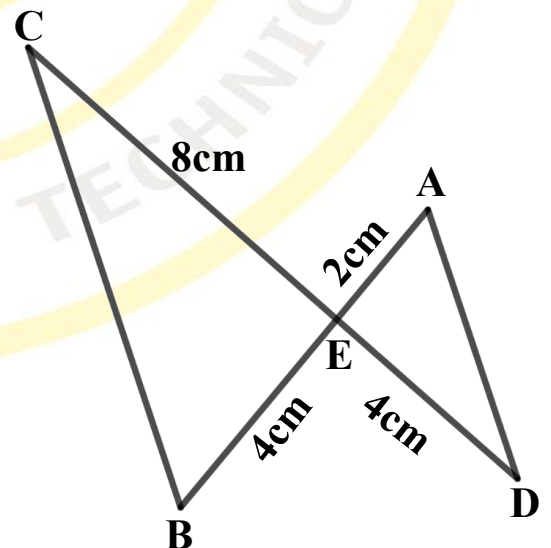
$AE = 2$ cm, $EB = ED = 4$ cm,

$CE = 8$ cm.

Prove that:

First: $\triangle AED \sim \triangle BEC$

Second: $\overline{AD} \parallel \overline{CB}$



(12) In the opposite figure:

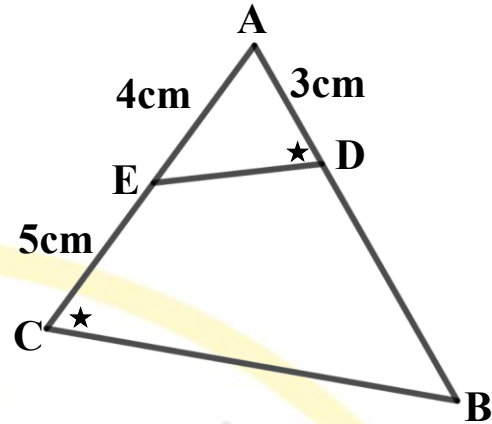
ABC is a triangle, $D \in \overline{AB}$, $E \in \overline{AC}$,

$m(\angle ADE) = m(\angle ACB)$,

$AD = 3$ cm, $AE = 4$ cm, $CE = 5$ cm

First: Prove that: $\triangle AED \sim \triangle ABC$

Second: Find the length of \overline{BD}



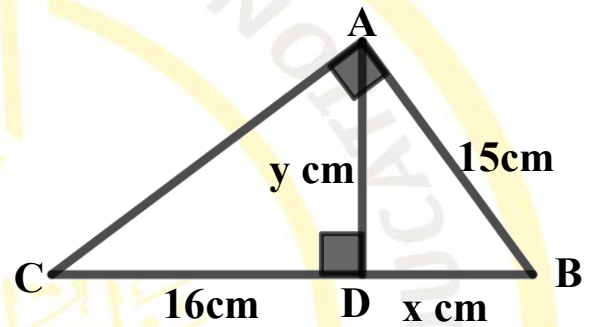
(13) In the opposite figure:

ABC is a right-angled triangle at A

$\overline{AD} \perp \overline{BC}$, $BD = x$ cm, $DC = 16$ cm

$AB = 15$ cm, $AD = y$ cm.

Find: $x + y$



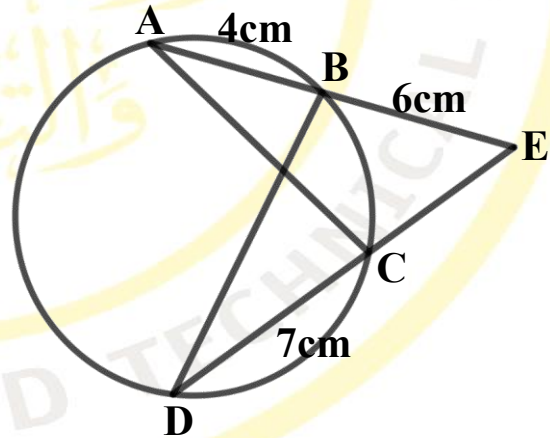
(14) In the opposite figure:

$\overline{AB} \cap \overline{DC} = \{E\}$, $AB = 4$ cm,

$DC = 7$ cm, $BE = 6$ cm.

First: prove that: $\triangle ACE \sim \triangle DBE$

Second: Find the length of \overline{CE}



(15) ABC is a right angled triangle at A , $\overline{AD} \perp \overline{BC}$ to intersect it at D ,

If $BD : DC = 1 : 2$, $AD = 6\sqrt{6}$ cm.

Find the length of \overline{BD} , \overline{AB} , \overline{AC}



④ الرياضيات لغات للصف الأول الثانوي الأداء المنزلي الأسبوع الرابع ④

(1) Determine the type of the roots of each of the following equations:

a) $x^2 - 4x + 2 = 0$

b) $x^2 - 12x + 36 = 0$

c) $7x + 4x^2 = -9$

d) $x(x + 5) + 3 = 0$

(2) Prove that the roots of the equation: $2x^2 - 3x + 2 = 0$

are complex and not real, and then by using the general formula find these two roots.

(3) Find the real value of k , which makes the two roots of the equation:

$3x^2 - 6x + k = 0$ are equal, then find this two roots.

(4) If m is a rational number prove that the two roots of the equation:

$25x^2 + 5(m + 3)x + 3m = 0$ are rational numbers

(5) Find the real values of the number k which satisfy that the equation:

$(k - 4)x^2 - 3x + k = 0$ has no real roots.

(6) Find the length of the arc in a circle of radius length 6 cm. which opposite to a central

angle of measure $\frac{\pi}{6}$ to the nearest two decimal place.

(7) Find the measure of the central angle which opposite to an arc of length 2π cm in a circle of radius length 6 cm.

(8) Find the degree measure (degree, minute, second) to the angle of measure 1.4 radian.

(9) Find the degree and the radian measure of a central angle opposite to an arc of length (L) in a circle of radius (r) in the following cases:

a) $L = 10$ cm, $r = 5$ cm

b) $L = \pi$ cm, $r = 10$ cm

10) In the opposite figure:

ABC is a triangle, $D \in \overline{AB}$, $E \in \overline{AC}$,

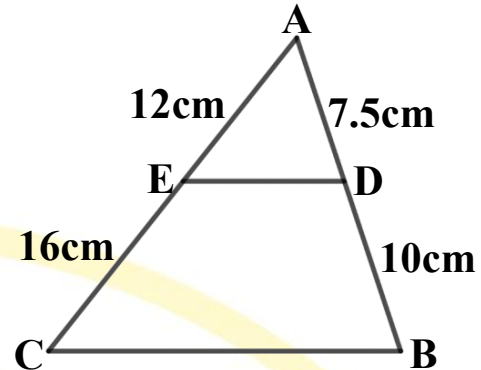
$AD = 7.5$ cm, $AE = 12$ cm,

$DB = 10$ cm, $EC = 16$ cm,

Prove that:

First: $\triangle ADE \sim \triangle ABC$

Second: $\overline{DE} \parallel \overline{BC}$



(11) In the opposite figure:

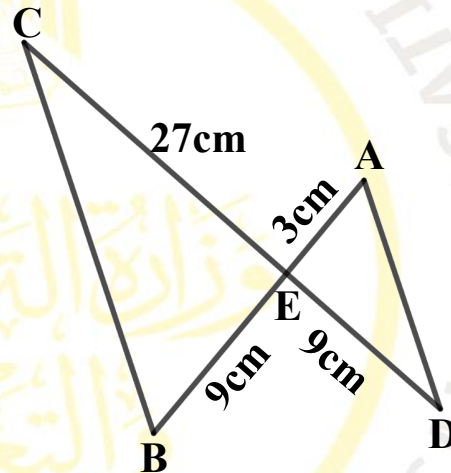
$\overline{AB} \cap \overline{CD} = \{E\}$

$AE = 3$ cm, $EB = ED = 9$ cm,

$CE = 27$ cm.

First: Prove that $\triangle AED \sim \triangle BEF$

Second: If $AD = 11$ cm, find BC .



(12) In the opposite figure:

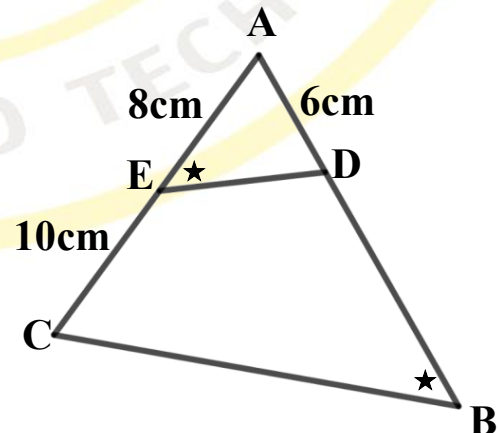
ABC is a triangle, $D \in \overline{AB}$, $E \in \overline{AC}$,

$m(\angle AED) = m(\angle ABC)$,

$AD = 6$ cm, $AE = 8$ cm, $CE = 10$ cm

First : Prove that: $\triangle ADE \sim \triangle ACB$

Second: find the length of \overline{BD}



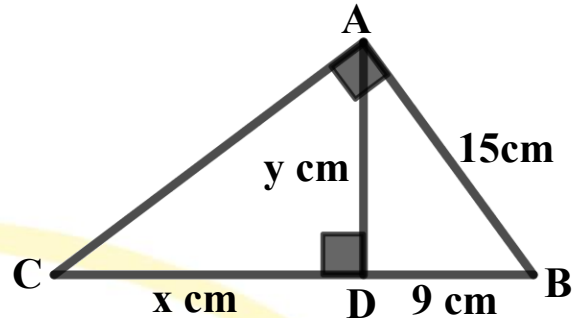
(13) In the opposite figure:

$\triangle ABC$ is a right-angled triangle at A

$\overline{AD} \perp \overline{BC}$, $BD = 9$ cm, $DC = x$ cm

$AB = 15$ cm, $AD = y$ cm.

Find: $x + y$



(14) In the opposite figure:

\overline{AB} , \overline{DC} are two chords of circle, $\overline{AB} \cap \overline{DC} = \{E\}$,

$AB = 2$ cm, $CD = 3.5$ cm, $BE = 3$ cm,

First: prove that: $\triangle ADE \sim \triangle CBE$

Second find the length of \overline{CE}

(15) In the opposite figure:

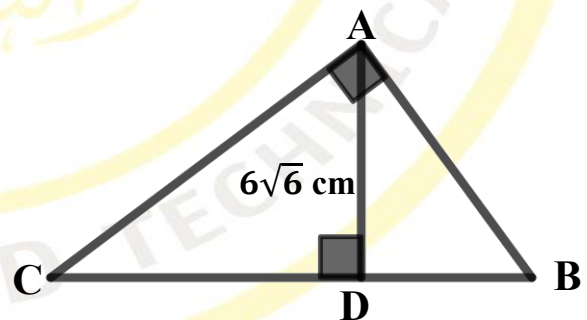
$\triangle ABC$ is a right angled triangle at A,

$\overline{AD} \perp \overline{BC}$ to intersect it at D,

if $BD : DC = 1 : 2$, $AD = 6\sqrt{6}$ cm.

Find:

the length of \overline{BD} , \overline{AB} and \overline{AC}



First Group

(1) Determine the type of the roots of the equations:

$$(x - 2) + x(x - 3) = 0$$

(2) Find the real value of k , which makes the two roots of the equation: $x^2 - kx + 9 = 0$ are equal, then find these two roots.

(3) The measure of an angle of a triangle is 60° and the measure of another angle is $\frac{\pi}{4}$, find the degree and radian measure of the third angle

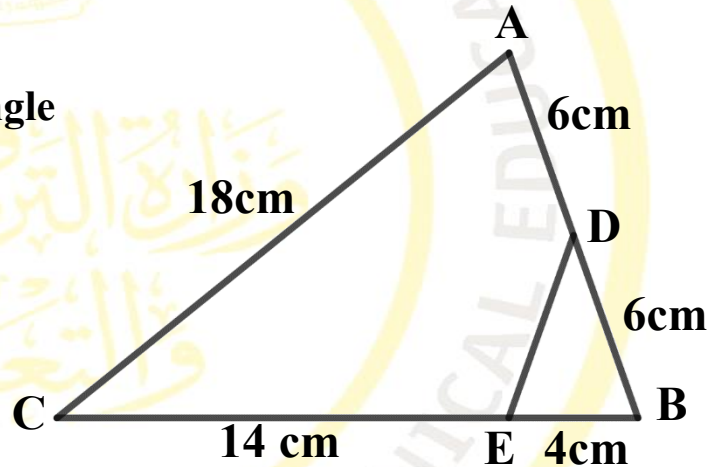
(4) In the opposite figure: ABC is a triangle

$$AC = 18 \text{ cm}, D \in \overline{AB}, E \in \overline{BC}$$

$$\text{Where } AD = DB = 6 \text{ cm}$$

$$BE = 4 \text{ cm}, EC = 14 \text{ cm}$$

Find the length of \overline{DE}



(5) In the opposite figure:

ABC is a triangle,

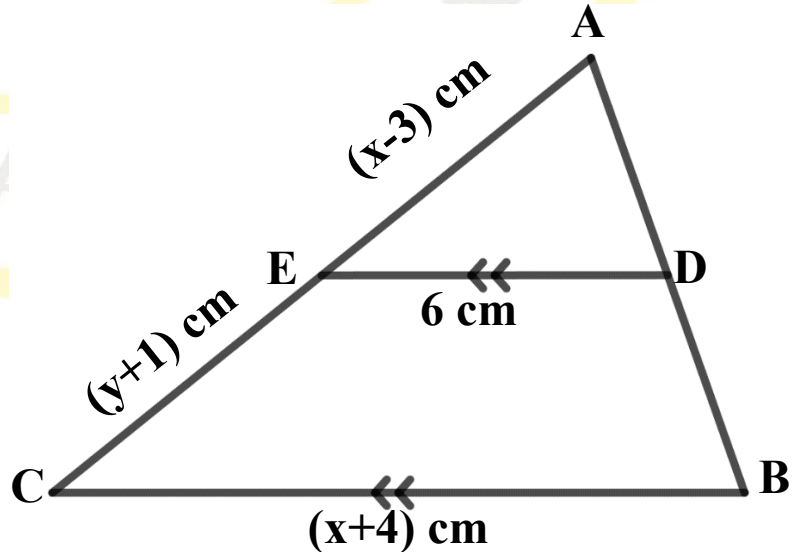
$$BC = (x+4) \text{ cm}$$

$$\overline{DE} \parallel \overline{BC}, AD = \frac{1}{2} AB$$

$$DE = 6 \text{ cm}, AE = (x - 3) \text{ cm}$$

$$CE = (y + 1) \text{ cm}$$

Find $x + y$



Second Group

(1) Determine the type of the roots of the equations:

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

(2) Find the real value of k , which makes the two roots of the equation $x^2 - kx + 4 = 0$ are equal, then find these two roots.

(3) The measure of an angle of a triangle is 70° and the measure of another angle is $\frac{\pi}{4}$ find the degree and radian measure of the third angle

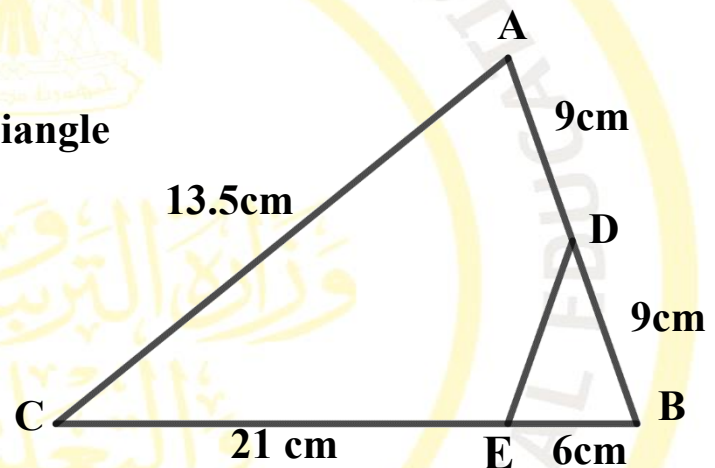
(4) In the opposite figure: ABC is a triangle

$AC = 13.5 \text{ cm}$, $E \in \overline{AB}$, $D \in \overline{BC}$,

where $AD = DB = 9 \text{ cm}$

$BE = 6 \text{ cm}$, $EC = 21 \text{ cm}$

Find the length of \overline{DE}



(5) In the opposite figure:

ABC is a triangle,

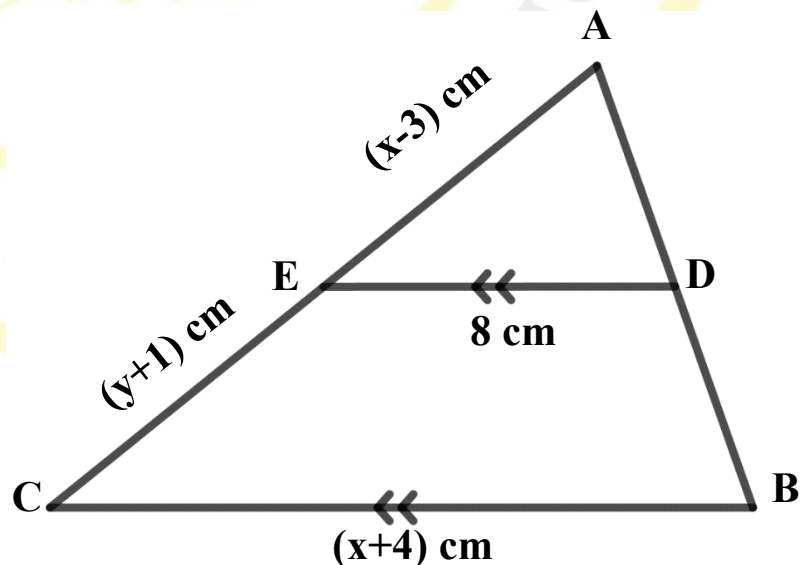
$BC = (x+4) \text{ cm}$

, $AD = \frac{1}{2} \overline{ABDE} \parallel \overline{BC}$

$DE = 8 \text{ cm}$, $AE = (x - 3) \text{ cm}$

$CE = (y + 1) \text{ cm}$

Find: $x + y$



Third Group

(1) Determine the type of the roots of the equations:

$$(x + 1) + x(x - 7) = 0$$

(2) Find the real value of k , which makes the two roots of the equation $x^2 - kx + 1 = 0$ are equal, then find these two roots.

(3) The measure of an angle of a triangle is 80° and the measure of another angle is $\frac{\pi}{4}$ find the degree and radian measure of the third angle

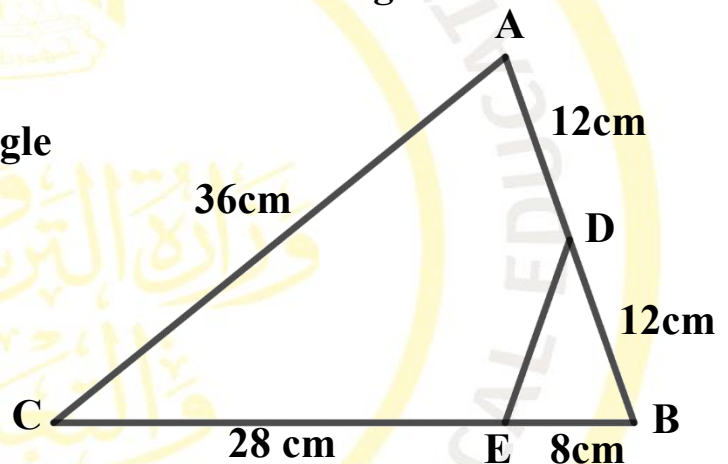
(4) In the opposite figure: ABC is a triangle

$$AC = 36\text{cm}, D \in \overline{AB}, E \in \overline{BC}$$

$$\text{Where } AD = DB = 12\text{ cm}$$

$$BE = 8\text{ cm}, EC = 28\text{ cm}$$

Find the length of \overline{DE}



(5) In the opposite figure:

ABC is a triangle,

$$BC = (x+4)\text{cm}$$

$$\overline{DE} \parallel \overline{BC}, AD = \frac{1}{2} AB$$

$$DE = 10\text{ cm}, AE = (x-3)\text{cm}$$

$$CE = (y+1)\text{ cm}$$

Find $x+y$

