*للحصول على أوراق عمل لجميع الصفوف وجميع المواد اضغط هنا

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* للحصول على أوراق عمل لجميع مواد الصف الثالث الإعدادي اضغط هنا

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* للحصول على جميع أوراق الصف الثالث الإعدادي في مادة رياضيات ولجميع الفصول, اضغط هنا

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* للحصول على أوراق عمل لجميع مواد الصف الثالث الإعدادي في مادة رياضيات الخاصة بـ اضغط هنا

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* لتحميل كتب جميع المواد في جميع الفصول لـ الصف الثالث الإعدادي اضغط هنا

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ف٢ ( )

Arab Republic of Egypt
Ministry of Education
The completion of the basic education certificate
Examination 2016for our sons abroad

E٣٣١٤

Geometry ,Trigonometry | Second Term | Time : 2 hours

(الفصل الدراسى الثانى ٢٠١٦) | الصف الثالث الاعدادى | مادة : الهندسة وحساب المثلثات

(الأسئلة فى صفحتين) | تنبيه هام : (يسلم الطالب ورقة امتحانيه باللغة العربية مع الورقة المترجمة)

يسمح باستخدام الآلة الحاسبة

Answer the following questions:-

First Question: Choose the correct answer from those between brackets:

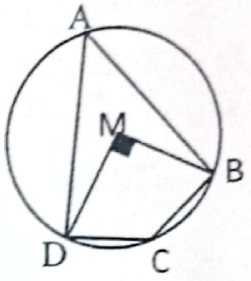
(1) The ratio between the measure of the central angle and the measure of the inscribed angle subtended by the same arc is … (1:2 ; 2:1 ; 1:1 ; 1:3)

(2) The number of common tangent of two circles touch internally ……

(1 ; 2 ; 3 ; 0)

(3) In the opposite figure if m(∠BMD) = 90° Then m(∠C) =…..

(45° ; 135° ; 90° ; 150°)



(4) The measure of inscribed angle drawn in semi-circle

(360° ; 180°; 120° ; 90°)

(5) M is a circle with diameter length 8 cm, If the straight line L is distant from its center 3 cm then L is ….

(tangent to the circle ; a secant for the circle ; outside the circle ; axe of symmetry for the circle)

(6) M and N are two circles touching interlay, If their radii lengths are 4cm, 7cm. Then MN = … cm

(3; 4 ; 7 ; 11)

Second Question:

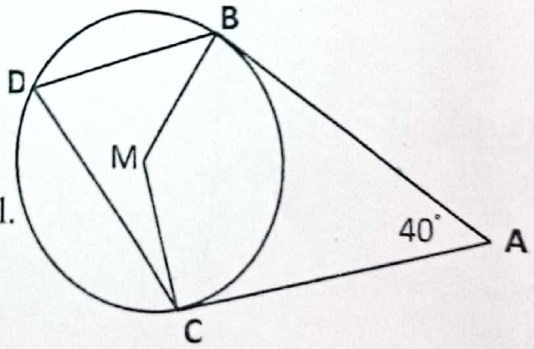
a) In the opposite figure :

$\overline{AB}, \overline{AC}$ are two tangents for the circle M at B,C

m(∠A) = 40°

1) Find m(∠D)

2) Prove That: ABMC is a cyclic quadrilateral.

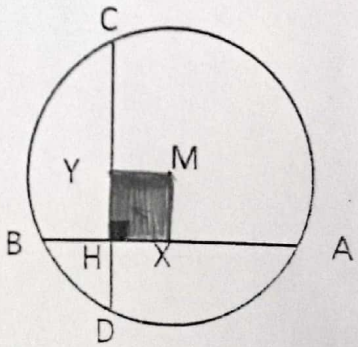


b) In the opposite figure :

$\overline{AB}, \overline{CD}$ are two perpendicular chords and have the same length in the circle M.

If X and Y are the midpoints of $\overline{AB}, \overline{CD}$ respectively .

Prove that: MXHY is a square.



(بقية الأسئلة فى الصفحة الثانية)

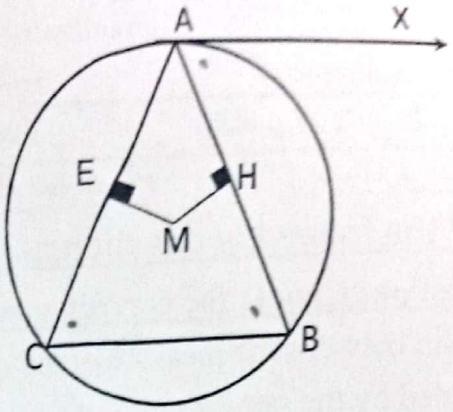
Third Question:

a) In the opposite figure:

$\overrightarrow{AX}$ is a tangent of circle M at A

$\overline{MH} \perp \overline{AB}, \overline{ME} \perp \overline{AC}, MH = ME.$

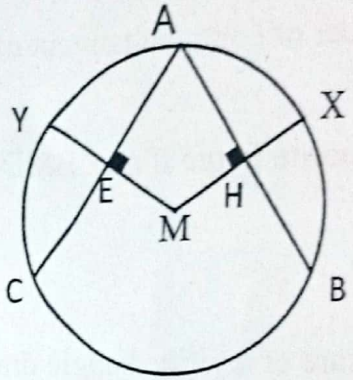
Prove That: $\overline{AX} // \overline{CB}$



b) In the opposite figure:

$\overline{MH} \perp \overline{AB}$, $\overline{ME} \perp \overline{AC}$, XH=YE

Prove That: AB=AC



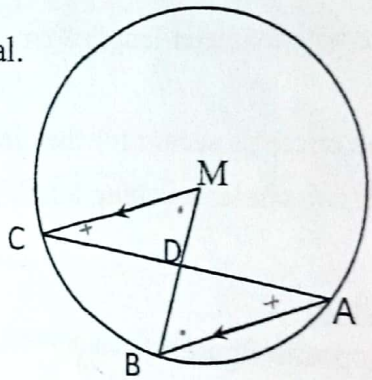
Fourth Question:

a) State two cases of quadrilateral is cyclic quadrilateral.

b) In the opposite figure:

$\overline{MC} // \overline{AB}$.

Prove that: AD >DB



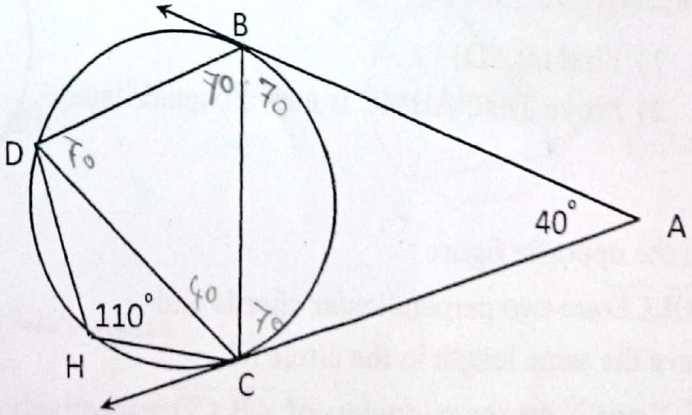
Fifth Question:

In The opposite figure:

$m(\angle A)=40°, m(\angle H)=110°$

Prove that:

1) $\overline{CB}$ bisects $\angle ABD$
2) BC=CD



(انتهت الأسئلة)

Geometry 2016
- 2nd Term -

Q.1 Choose

① 2 : 1

② 1

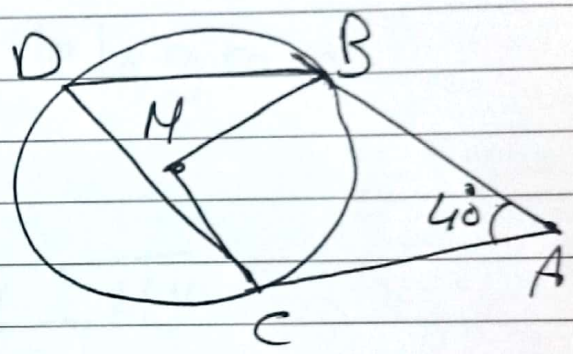
③ 135°

④ 90°

⑤ a secent For the Circle

⑥ 3 Cm

Q.2 ⓐ Proof



$\because \overline{AB}, \overline{AC}$ are two tangents, $\overline{MB}, \overline{MC}$ are two radii

$\therefore \overline{MB} \perp \overline{AB}$, $\overline{MC} \perp \overline{AC}$

$\therefore m(\angle MBA) = m(\angle MCA) = 90^\circ$

In the quadrilateral ABMC:

$m(\angle M) = 360 - (90 + 90 + 40) = 140^\circ$

$\because m(\angle D) = \frac{1}{2} m(\angle M)$ (inscribed and Central)

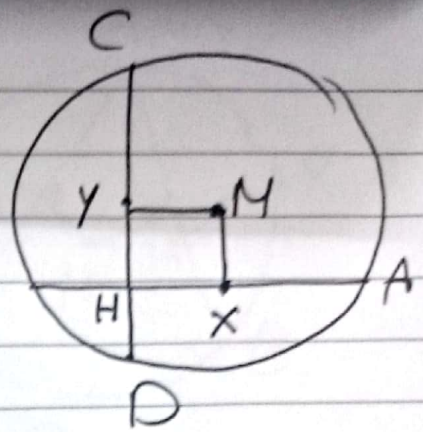
$\therefore m(\angle D) = \frac{1}{2} \times 140 = 70^\circ$ ✗✗

In quadrilateral ABMC:

$\because m(\angle B) + m(\angle C) = 90^\circ + 90^\circ = 180^\circ$ and they're opposite

$\therefore$ ABMC is cyclic quad. ✗✗

Q.2 (b) Proof:



$\because$ X is mid point of $\overline{AB}$,
Y is mid point of $\overline{CD}$

$\therefore \overline{MX} \perp \overline{AB}$, $\overline{MY} \perp \overline{CD}$

$\because \overline{AB} \perp \overline{CD}$ (given)

$\therefore \overline{MX} \parallel \overline{YH}$, $\overline{MY} \parallel \overline{XH}$

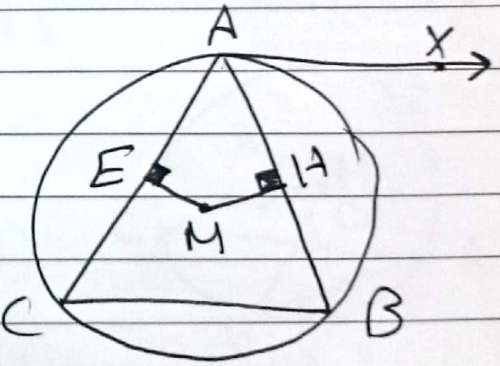
$\therefore$ MXHY is a parallelogram

$\because AB = CD$

$\therefore MX = MY$, $\overline{MX} \perp \overline{MY}$

$\therefore$ MXHY is a square //

Q.3 (a) proof



$\because \overrightarrow{AX}$ is a tangent, $\overline{AB}$ is a chord

$\therefore m(\angle XAB) = m(\angle C) \rightarrow (1)$

$\because \overline{MH} \perp \overline{AB}$, $\overline{ME} \perp \overline{AC}$, $MH = ME$

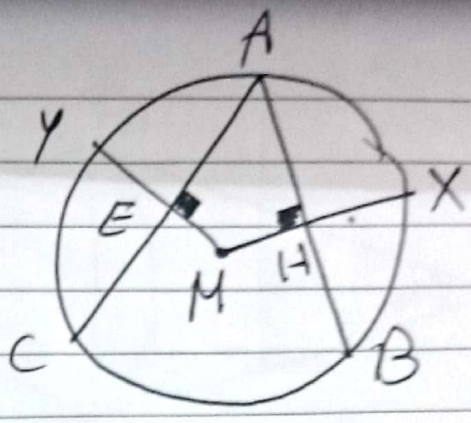
$\because AB = AC$ $\therefore \triangle ABC$ is isosceles

$\therefore m(\angle B) = m(\angle C) \rightarrow (2)$

From (1), (2) $m(\angle XAB) = m(\angle B)$

and they're alternate $\therefore \overline{AX} \parallel \overline{CB}$ //

Q.3 (b) proof



$\because MX = MY =$ radius $\rightarrow$ (1)

$\because HX = EY \rightarrow$ (2) (given)

by subtracting (2) from (1)

$\therefore MH = ME$

$\because \overline{MH} \perp \overline{AB}$, $\overline{ME} \perp \overline{AC}$

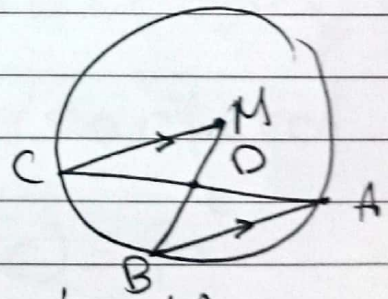
$\therefore AB = AC$ //

Q.4 (a) The quadrilateral is cyclic if:-

(1) Each Two opposite angles are supplementary.

(2) The measure of the exterior angle at a vertex equals the measure of the interior angle at the opposite vertex.

(b) Proof : $\because \overline{MC} \parallel \overline{AB}$



$\therefore m(\angle M) = m(\angle B) = m(\overset{\frown}{CB})$ (alternate)

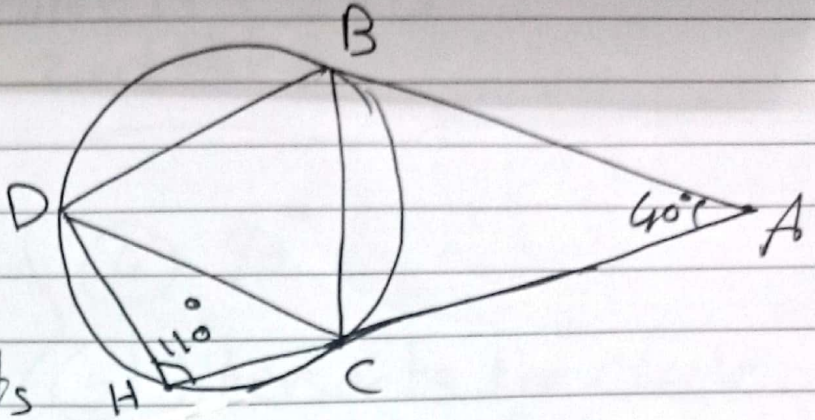
$\therefore m(\angle A) = \frac{1}{2} m(\overset{\frown}{CB})$ (inscribed)

In ΔABD

$m(\angle B) > m(\angle A)$

$\therefore AD > BD$ //

Q.5



Proof :-

$\because \overline{AB}, \overline{AC}$ are two tangent segments

From A $\quad \because AB = AC$

$\therefore m(\angle ABC) = m(\angle ACB) = \frac{180-40}{2} = 70^\circ \rightarrow (1)$

$\because BCHD$ is cyclic quad, $\angle H, \angle CBD$ are opposite

$\therefore m(\angle CBD) = 180 - 110 = 70^\circ \rightarrow (2)$

From (1) and (2)

$m(\angle ABC) = m(\angle CBD) = 70^\circ$

$\therefore \overline{BC}$ bisects angle ABD ✓

$\because \overline{AB}$ is a tangent, $\overline{BC}$ is a chord

$\therefore m(\angle ABC) = m(\angle BDC) = 70^\circ$

$\therefore$ In $\triangle BCD$:-

$m(\angle CBD) = m(\angle BDC) = 70^\circ$

$\therefore BC = CD$ ✓

4