



## الصف الثالث الإعدادي - أداء صفى - الأسبوع الثالث

### Algebra (Solving a quadratic equation in one unknown graphically)

### Geometry (Determining the circle - The relationship of the chords of the circle to its center)

1) Draw the graph of the function  $f(x) = x^2 - 4x + 3$  in the interval  $[-1, 5]$

From the graph, find 1) the vertex of the curve

, 2) the solution set of the equation  $f(x) = 0$

2) Draw the graph of the function:  $f(x) = -x^2 + 6x - 11$  in the interval  $[0, 6]$ , from the graph, find the solution set of the equation  $x^2 - 6x + 11 = 0$

3) If the curve of the quadratic function  $f$  passes through the points  $(-1, 0)$ ,  $(0, -4)$ ,  $(4, 0)$ , find the solution set of the equation  $f(x) = 0$

4) If the curve of the quadratic function  $f$  does not intersect the  $x$ -axis at any point, state the number of solutions of the equation  $f(x) = 0$  in  $\mathbb{R}$ .

5) Draw the line segment  $\overline{AB}$  with a length of 5 cm, then draw a circle with a radius of 4 cm that passes through the points  $A$  and  $B$ , how many circles can be drawn? (Do not erase the arcs)

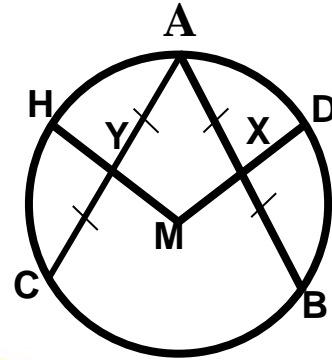
6) Using geometric tools, draw the right angled triangle  $ABC$  at point  $B$  where  $AB = 3\text{cm}$  and  $BC = 4\text{ cm}$ , then draw a circle that passes through its vertices and from the drawing, find the length of the radius of the circle.(Do not erase the arcs)



7) In the following figure:  $AB = AC$ ,

X is the midpoint of  $\overline{AB}$ ,

Y is the midpoint of  $\overline{AC}$ , Prove that  $XD = YH$ .

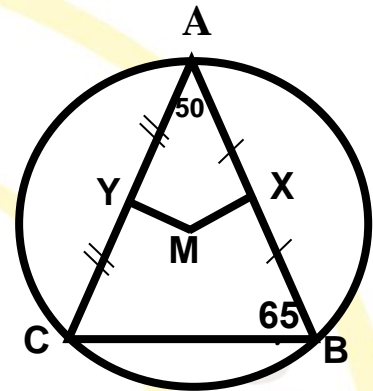


8) In the following figure:

$m(\angle A) = 50^\circ$ ,  $m(\angle B) = 65^\circ$

X and Y are the midpoints of  $\overline{AB}$ ,  $\overline{AC}$  respectively,

(1) find  $m(\angle XMY)$       (2) prove that  $MX = MY$



9) In the following figure:

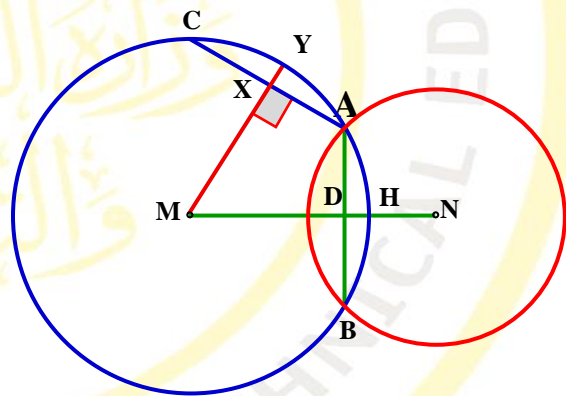
M and N are two intersecting circles

at the points A and B, Draw  $\overline{MX} \perp \overline{AC}$

which intersects the circle M at Y,

draw  $\overline{MN} \perp \overline{AB}$  which intersects  $\overline{AB}$

at D and the circle M at H,  $AC = AB$ , Prove that  $XY = DH$



10) In the opposite figure :

$BC = DH$ ,  $\overline{MX} \perp \overline{BC}$ ,  $\overline{MY} \perp \overline{DH}$ .

Prove that  $AB = AD$

