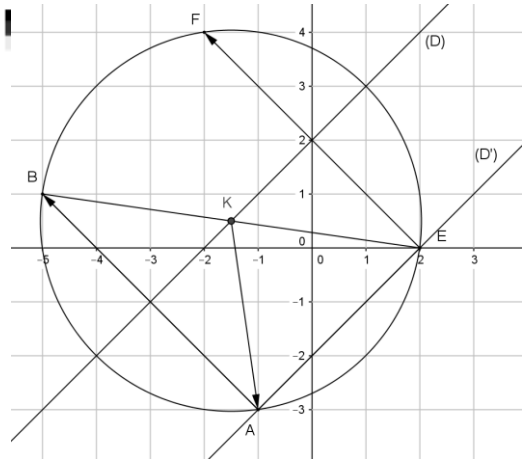
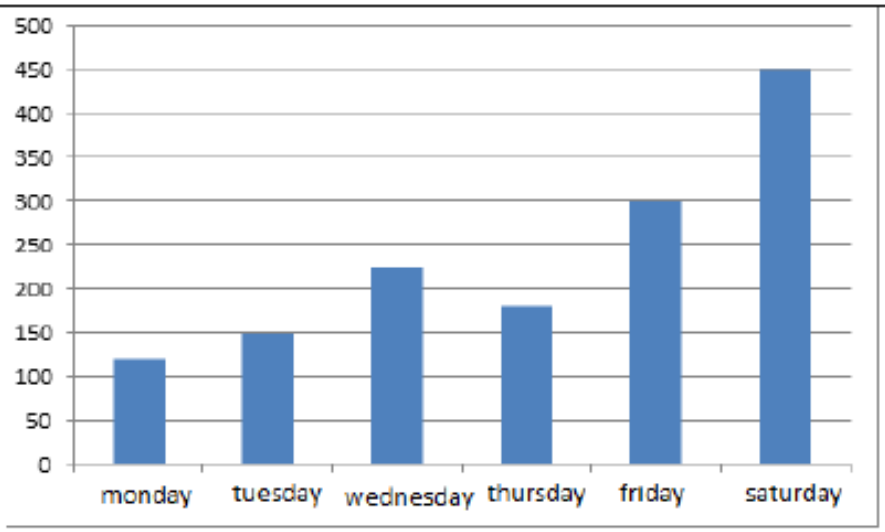
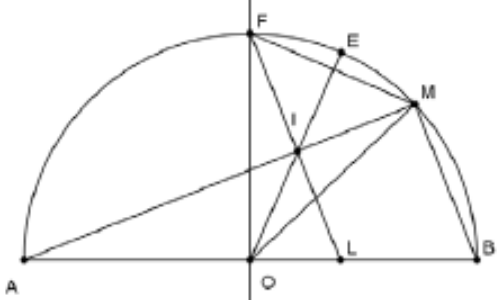
المركز التربوي للبحوث والانماء	الهيئة الأكاديمية المشتركة قسم : الرياضيات	المادة:الرياضيات الشهادة: المتوسطة نموذج رقم ـ٤ـ المدّة : ساعتان

أسس التصحيح (تراعي تعليق الدروس والتوصيف المعدّل للعام الدراسي ٢٠١٦ـ٢٠١٧ وحتى صدور المناهج المطوّرة)

Question		اسس التصحيح	Note
I	1)	True Justification: substitute x by $(\sqrt{3}-1)$ the equation is verified.	0.5
	2)	False Justification : if x is the initial price, after first decrease the price is $0.8\,x$; after the second the price = $0.8\,.\,(0.8\,x) = 0,64\,x$. the price decrease de 36%.	0.5
	3)	True Justification : $(x+1)^2-(x-1)^2 = 4x$ positive ,product of 2 positives numbers.	0.5
	4)	True. Justification : $\cos^2\hat{C} + \cos^2\hat{B} = \frac{AC^2}{BC^2} + \frac{AB^2}{BC^2} = \frac{AC^2+AB^2}{BC^2} = 1$	0.5
II	1)	a) 	0.5
		b) Slope of (AB) = -1, $a_{(AB)} \times a_{(D)} = -1$ then (D) $\perp$ to (AB). The midpoint of [AB] have coordinates (-3 ,-1) et -1= -3 +2 which is on (D) then(D) is the perpendicular bisector of [AB].	1
	2)	a) K midpoint of [EB] then K(-3/2 ,1/2) Radius of the circle = $\frac{AB}{2} = \frac{\sqrt{50}}{2}$ or AK = $\sqrt{\frac{50}{4}} = \frac{AB}{2}$ = radius, K is on (C).	1
		b) KM = $\sqrt{(m-\frac{1}{2})^2}$, M is on (C) then KM= radius, $\sqrt{(m-\frac{1}{2})^2} = \sqrt{\frac{50}{4}}$ then $(m-\frac{1}{2})^2 = \frac{50}{4}$ $(m-\frac{1}{2}) = \frac{\sqrt{50}}{2}$ or $(m-\frac{1}{2}) = \frac{-\sqrt{50}}{2}$ then m= $\frac{\sqrt{50}}{2}+\frac{1}{2}$ or m = $\frac{-\sqrt{50}}{2}+\frac{1}{2}$.	1
	3)	a) $\overrightarrow{EF} = \overrightarrow{AB}$, $x_F - 2 = -4$ and $y_F = 4$ then F (-2 , 4). ABEF is a rectangle.(parm + right angle)	1

		b) K point on (D) and A translate of K, (AE) // to (D) then (D')= (AE) . slope of(AE)$=\frac{yE-yA}{xE-xA}=1$ or $a_{(D')}=a_{(D)}=1$, y =x+b or A is on (D') then $y_A=x_A+b$, b = −2.	1
III	1)	day | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday frequency | 120 | 150 | 225 | 180 | 300 | 450	1,25
	2)	The percentage of televisions not sales $\frac{75}{1500}=5\ \%$	0.5
	3)		0,75
IV	1)	a- $Q(x)=(x-2)^2+5(x-3)(2-x)+x^2-4$. $=x^2-4x+4+5(-x^2+5x-6)+x^2-4$ $=-3x^2+21x-30$	0.5
		b- Q(x) = -30 then Q(x) + 30 = 0 then x= 0 or x= 7	0.5
		c- $Q(x)=(x-2)^2+5(x-3)(2-x)+(x-2)(x+2)$ $=(x-2)[(x-2)-5(x-3)+(x+2)]$ $=(x-2)(-3x+15)$.	0.5
	2)	a- D(x) ≠ 0 then $x^2-4x+4+(2x-4)(x+3)\neq 0$ $(x-2)(3x+4)\neq 0$. Then x≠ 2and $x\neq\frac{-4}{3}$	0.75
		b- $F(x)=\frac{(x-2)(-3x+15)}{(x-2)(3x+4)}=\frac{(-3x+15)}{(3x+4)}$ $F(x)=2,\ \frac{-3x+15}{3x+4}=2$ -3 x + 15 = 2 (3x + 4) $x=\frac{7}{9}$	0.25 0.5
V		Let $x$be the price of tishirt and y the price of pant. $\begin{cases}4x+3y=100\,000\\6x+5y=120\,000\end{cases}$	1,25
		y= - 80 000 LL impossible my cousin is wrong .	0,75

VI	1)		0,5
	2)	a) $\widehat{AMB}$ =90° (AMB inscribed in semicircle (C)) $\widehat{AOD}$ =90° $\widehat{ADO}$ = $\widehat{ABM}$ =90-$\widehat{ADO}$	1
		b) $\frac{AM}{AO}=\frac{AB}{AD}$ then AM x AD = AB x AO = 6x3 = 18.	0,5
	3)	(OE) axis of symmetry in the isosceles triangle OFM. I point of the axis, then IF = IM then the triangle IFM is isosceles. $\widehat{AMF}$ = $\widehat{IMF}$ =90 /2 = 45°, then FIM right isosceles triangle.	1
	4)	(FI) // (MB) two perpendiculars to (MB). Thales : $\frac{LA}{LB}=\frac{IA}{IM}$ or IM=IF then $\frac{LA}{LB}=\frac{IA}{IF}$.	1
	5)	In the triangle AMB: MH x AB = MA x MB MH x 6 $=\frac{18}{AD}$ x MB then MH = $\frac{18 \times MB}{6 \times AD}=\frac{3 \times MB}{AD}$	1