EXAMEN BLANC REGIONAL
CORRECTION ET BAREME

Coefficient : 3
Durée : 2 h

NB : ***Dans ce barème, on attribuera la totalité des points à toute autre méthode correcte***

Exercice 1 (2 points)

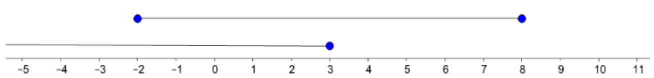
1-VRAI 2-VRAI 3-FAUX 4-FAUX ……………………………………………….………**4×0,5pt**

Exercice 2 (2 points)

1-C 2-A 3-C 4-B ………………………………………………………….………**4×0,5pt**

Exercice 3 (3 points)

1) Représentation **…2×0,5pt**



2) a) $E \cup F =]\leftarrow; 8]$ …………....……………………………………………..………**1pt**
   b) $E \cap F = [-2; 3]$ …………...……………………………………………...………**1pt**

Exercice 4 (3 points)

1) Le triangle CMU est inscrit dans le cercle $(\mathcal{C})$ et son côté $[CM]$ est un diamètre du cercle $(\mathcal{C})$.
   Donc CMU est un triangle rectangle en U. ……..……………………………...………**1pt**
2) $cos\widehat{CMU} = \frac{MU}{CM}$ …………...………………….…………………………...………**0,5pt**
3) $cos\widehat{CMU} = \frac{2\sqrt{5}}{6}$ ………...…………...…….……………………………...………**0,5pt**
   $cos\widehat{CMU} = \frac{\sqrt{5}}{3}$

4) On a $cos\widehat{CMU} = \frac{\sqrt{5}}{3} = 0{,}745$
   D'où $0{,}743 < 0{,}745 < 0{,}755$………...…………………………………...………**0,5pt**
   $cos 42° < cos\widehat{CMU} < cos 41°$
   Donc $41° < mes\widehat{CMU} < 42°$ ………...……………………………………...………**0,5pt**

Exercice 5 (6 points)

1) $A = \frac{1+\sqrt{2}}{4-3\sqrt{2}}$
   $A = \frac{(1+\sqrt{2})(4+3\sqrt{2})}{(4-3\sqrt{2})(4+3\sqrt{2})}$ ……………….....……………………………………...………**0,5pt**
   $A = \frac{4+3\sqrt{2}+4\sqrt{2}+6}{4^2-(3\sqrt{2})^2}$ ………………....………………..……………………...………**0,5pt**
   $A = \frac{10+7\sqrt{2}}{16-18}$ ……………………....…………………..……………………...………**0,5pt**
   $A = \frac{10+7\sqrt{2}}{-2}$
   $A = -\frac{10+7\sqrt{2}}{2}$

2) a) $A \times B = -\frac{10+7\sqrt{2}}{2} \times (7\sqrt{2} - 10)$

$A \times B = -\frac{(10+7\sqrt{2})(7\sqrt{2}-10)}{2}$ ……………………………………………………………**0,5pt**

$A \times B = -\frac{(7\sqrt{2})^2-10^2}{2}$

$A \times B = -\frac{98-100}{2}$ ……………………………………………………………………**0,5pt**

$A \times B = -\frac{-2}{2}$ …………………………………………………………………………**0,5pt**

$A \times B = 1$

b) On a $A \times B = 1$ donc A et B sont deux nombres inverses l'un de l'autre. …………**0,5pt**

3) a) On a $(7\sqrt{2})^2 = 98$ et $10^2 = 100$ ……………………………………………………**0,5pt**

D'où $(7\sqrt{2})^2 < 10^2$

Donc $7\sqrt{2} < 10$ ……………………………………………………………………………**0,5pt**

b) on a $7\sqrt{2} < 10$ d'où $7\sqrt{2} - 10 < 0$ ……………………………………………………**0,5pt**

Donc $7\sqrt{2} - 10$ est négatif

c) $7\sqrt{2} - 10$ est négatif donc $|7\sqrt{2} - 10| = -(7\sqrt{2} - 10) = 10 - 7\sqrt{2}$ ……………**1pt**

<u>**Exercice 6** (4 points)</u>

1) on a $I\left(\frac{2+8}{2}; \frac{-1+6}{2}\right)$ ……………………………………………………………**1pt**

donc $I(5; 2)$

2) On a $GI = \sqrt{(5-1)^2 + (2-6)^2}$ ……………………………………………………**1pt**

$\left.\begin{aligned} GI &= \sqrt{4^2 + (-4)^2} \\ &= \sqrt{32} \end{aligned}\right\}$ ……………………………………………………………**0,5pt**

$\left.\begin{aligned} GI &= \sqrt{2 \times 16} \\ GI &= 4\sqrt{2} \end{aligned}\right\}$ ……………………………………………………………………**0,5pt**

On a $GI = 4\sqrt{2}$ or $BH = 4\sqrt{2}$ d'où $GI = BH$ ……………………………………………**0,5pt**

3) Donc ZIE a raison. ……………………………………………………………………………**0,5pt**