



Examen normalisé local

Matière : Mathématiques

Session : Janvier 2025

Durée : 2H
Coefficient : 1
Nombre de pages : 4

Nom et prénom :

Note :

Classe : 3 APIC /... N° d'ordre en classe :

N° d'ordre en examen local :

20

Exercice 1

1) Calculer en simplifiant les expressions suivantes :

On a $A = \sqrt{25} \times \sqrt{4}$ (0,5 pts)

Alors $A =$

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On a $B = 5\sqrt{3} + \sqrt{27} - \sqrt{12}$ (1,0 pt)

Alors $B =$

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2) Rendre rationnel le dénominateur des réels suivants :

On a $C = \frac{7}{\sqrt{3}}$ (0,5 pts)

Alors $C =$

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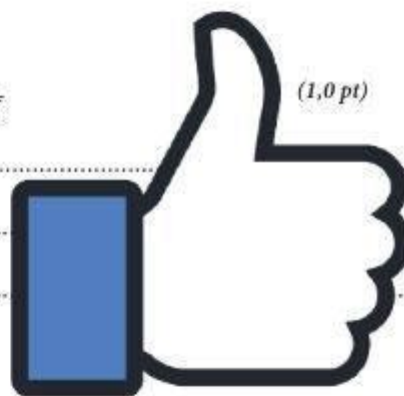
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On a $D = \frac{1}{\sqrt{7} - \sqrt{3}}$ (1,0 pt)

Alors $D =$

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3) Donner l'écriture scientifique du nombre E :

On a $E = 27000 \times 0,00001 \times (10^3)^{-4}$ (1,0 pt)

Alors $E =$

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4) x est un nombre réel, développer en simplifiant les expressions suivantes :

On a $F = (x - 2)^2$ (1,0 pt)

Alors $F =$

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On a $G = (x + \sqrt{5})(x - \sqrt{5})$ (1,0 pt)

Alors $G =$

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5) Factoriser les expressions suivantes :

On a $H = 16x^2 - 9$ (1,0 pt)

Alors $H =$

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On a $I = 4x^2 + 12x + 9$ (1,0 pt)

Alors $I =$

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(1,0 pt)

(1,0 pt)

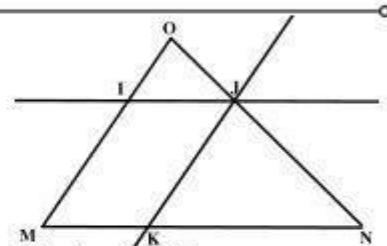
$$a + b \quad (0,5 \text{ pts}) \qquad a - b \quad (1,0 \text{ pt}) \qquad a \times b \quad (0,5 \text{ pts})$$

The image shows three vertical panels of handwriting practice paper. Each panel has horizontal dashed lines for letter height and a solid baseline. The first two panels are empty. The third panel, on the right, features a large, stylized blue thumbs-up icon, commonly known as the Facebook 'like' button, positioned in the center of the panel.



A horizontal number line is shown with arrows at both ends. It is labeled with 0 at the left end and 2 at the right end. A tick mark is placed at 1.5, with the number 1.5 written below it. A bracket is drawn below the line, starting from 0 and ending at 1.5, with the number 1.5 written below the bracket.

(II) // (MN); $MN = 15$; $OM = 9$; $OI = 3$ et $ON = 12$.



(1,5 pts)

La longueur l :

1. The first part of the document is a title page, which includes the title, author, and date. 2. The second part is the abstract, which provides a brief summary of the main findings of the study. 3. The third part is the introduction, which discusses the background and objectives of the research. 4. The fourth part is the methodology, which describes the research design and data collection methods. 5. The fifth part is the results, which presents the findings of the study. 6. The sixth part is the discussion, which interprets the results and discusses their implications. 7. The seventh part is the conclusion, which summarizes the main findings and provides recommendations for future research. 8. The eighth part is the references, which lists the sources used in the study. 9. The ninth part is the appendix, which contains supplementary material related to the study. 10. The tenth part is the index, which provides a list of topics and page numbers for easy navigation.	1. The first part of the document is a title page, which includes the title, author, and date. 2. The second part is the abstract, which provides a brief summary of the main findings of the study. 3. The third part is the introduction, which discusses the background and objectives of the research. 4. The fourth part is the methodology, which describes the research design and data collection methods. 5. The fifth part is the results, which presents the findings of the study. 6. The sixth part is the discussion, which interprets the results and discusses their implications. 7. The seventh part is the conclusion, which summarizes the main findings and provides recommendations for future research. 8. The eighth part is the references, which lists the sources used in the study. 9. The ninth part is the appendix, which contains supplementary material related to the study. 10. The tenth part is the index, which provides a list of topics and page numbers for easy navigation.
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2) K est un point de $[MN]$ tel que $NK=10$. Montrer que : $(MO) \parallel (JK)$.

(1,0 pt)

[illegible][illegible]

Exercise 4

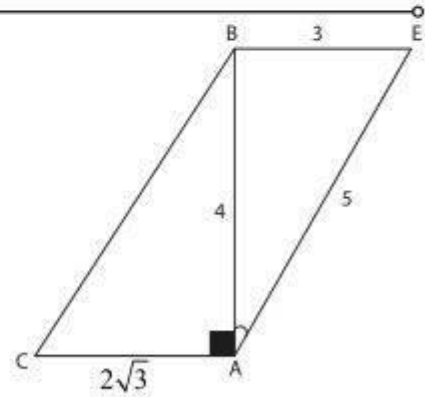
Partie 1 :

Sur la figure ci-contre, ABC est un triangle rectangle en A tel que :

$AB=4$; $AC=2\sqrt{3}$; $BE=3$ et $AE=5$.

1) Calculer la longueur BC :

(1,0 pt)

[illegible]

2) Montrer que ABE est un triangle rectangle.

(1,0 pt)

(This area contains horizontal lines for writing.)

A dashed vertical line separates the left margin from the main body of the page.

The right side of the page contains several horizontal dotted lines, indicating areas for writing or additional information.

3) Calculer les rapports trigonométriques de l'angle $\widehat{EAB}$.

(0,75 pts)

$$\cos \widehat{EAB}$$
$$\sin \widehat{EAB}$$
$$\tan \widehat{EAB}$$
A white thumbs-up icon, commonly known as the Facebook 'Like' button, is positioned in the upper left corner of the page. The icon is simple, with a white hand and a black outline.This image shows a full page of blank primary-ruled notebook paper. It features ten sets of horizontal lines across the page. Each set consists of a solid top line, a dashed middle line, and a solid bottom line, providing a guide for letter height and placement. The paper is white with light blue or grey lines. There are no margins, text, or other markings on the page.[illegible]

Partie 2 :

x est la mesure d'un angle aigu tel que : $\cos x = \frac{2}{3}$.

1) Montrer que : $\sin x = \frac{\sqrt{5}}{3}$. (0,75 pts)

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2) Dédire la valeur de $\tan x$. (0,5 pts)

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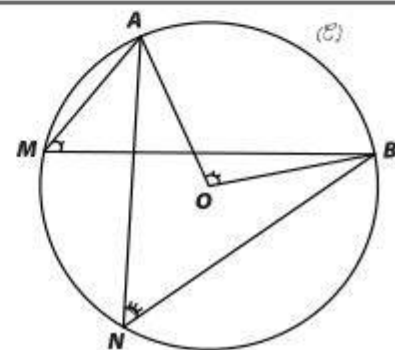
Exercice 5

Sur la figure ci-contre, $(\mathcal{C})$ est un cercle de centre O .

M est un point quelconque appartenant à $(\mathcal{C})$.

A et B sont deux points distincts de M situés sur le cercle $(\mathcal{C})$.

On donne $\widehat{ANB} = 50^\circ$.



1) Déterminer la mesure de l'angle $\widehat{AOB}$. (0,75 pts)

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2) Déterminer la mesure de l'angle $\widehat{AMB}$. (0,75 pts)

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