

Exercice 02 :

$$1) \sqrt{(-4)^2 + 4} = \sqrt{20} = \underline{\underline{2\sqrt{5}}}$$

$$2) \frac{2^{31} - 2^{24}}{2^{24} - 2^{31}} = \underline{\underline{-1}}$$

$$3) \begin{aligned} x \cdot y &= \sqrt{(17 - 12\sqrt{2})(17 + 12\sqrt{2})} \\ &= \sqrt{17^2 - (12\sqrt{2})^2} \end{aligned}$$

$$= \sqrt{289 - 288} = \underline{\underline{1}}$$

x et y sont inverses.

$$4) (-3)^{15} \times (-2)^{13} \times (-5)^{11} \text{ est négatif}$$



في دارك... إتهنوخ على قرابتة إصغارك

$$\begin{aligned}
 5) \quad \cos^2 15^\circ &= 1 - \sin^2 15^\circ \\
 &= 1 - \frac{2 - \sqrt{3}}{4} \\
 &= \frac{2 + \sqrt{3}}{4}
 \end{aligned}$$

$$\cos 15^\circ = \sqrt{\frac{2 + \sqrt{3}}{4}}$$

$$6) (AB) \parallel (CD)$$

Exercice 02

$$\begin{aligned}
 1) \quad A &= \sqrt{45} - \sqrt{4} - \sqrt{20} \\
 &= 3\sqrt{5} - 2 - 2\sqrt{5} \\
 &= \sqrt{5} - 2
 \end{aligned}$$



في دارك... إتهنوخ علمو قرابتة إصغارك



$$B = \sqrt{(1-2\sqrt{5})^2} + |3-\sqrt{5}|$$

$$= |1-2\sqrt{5}| + 3-\sqrt{5}$$

$$= 2\sqrt{5}-1 + 3-\sqrt{5}$$

$$= \sqrt{5}+2.$$

$$e) C = \frac{5+3\sqrt{2}}{3-\sqrt{2}} = \frac{(5+3\sqrt{2})(3+\sqrt{2})}{3^2-\sqrt{2}^2}$$

$$= \frac{21+14\sqrt{2}}{7} = 3+2\sqrt{2}$$

$$D = \frac{\sqrt{24}-2\sqrt{6}}{\sqrt{3}} = \frac{3\sqrt{3}-2\sqrt{6}}{\sqrt{3}}$$

$$= \frac{9-6\sqrt{2}}{3}$$

$$= 3-2\sqrt{2}$$



في دارك... انتخبون علمي قرابتة اصغارك

$$A.C = (3 - 2\sqrt{2})(3 + 2\sqrt{2})$$

$$= 3^2 - (2\sqrt{2})^2 = 1$$

$$\frac{2}{A} + \frac{2}{C} = 2 \left(\frac{1}{A} + \frac{1}{C} \right) = 2(C + A)$$

$$= 2(3 + 2\sqrt{2} + 3 - 2\sqrt{2})$$
$$= 12$$

$$3) a) E = (x+2)^3 - (3x+2)^2 - x(x^2 - 3x + 8)$$

$$E = x^3 + 6x^2 + 12x + 8 - 9x^2 - 12x - 4$$
$$- x^3 + 3x^2 - 8x$$

$$E = 4 - 8x$$



في دارك... إتهنوخ علمو قرابتة إصغارك

$$F = 8x^3 - 1 - (2x-1)(2x+6)$$

$$= (2x-1)(4x^2 + 2x + 1) - (2x-1)(2x+6)$$

$$= (2x-1)(4x^2 - 5)$$

Exercice 03:

$$1) \sin \widehat{ABC} = \frac{AC}{BC} = \frac{6}{9} = \frac{2}{3}$$

$$\cos^2 \widehat{ABC} = 1 - \sin^2 \widehat{ABC}$$

$$= 1 - \frac{4}{9}$$

$$= \frac{5}{9}$$

$$\cos \widehat{ABC} = \frac{\sqrt{5}}{3}$$

$$2) \cos \widehat{ABC} = \frac{AB}{BC} = \frac{3\sqrt{5}}{9}$$

$$AB = \frac{3\sqrt{5}}{3} BC = 3\sqrt{5}$$

$$3) AB \times AC = AH \times BC$$

$$9AH = 18\sqrt{5}$$

$$AH = 2\sqrt{5}.$$

II) Dans le triangle AHC

$$E \in [AC]$$

$$F \in [AH]$$

$$(EF) \parallel (CH)$$

D'après le théorème de Thalès.

$$\frac{AF}{AH} = \frac{AE}{AC} = \frac{EF}{CH}$$

$$\frac{AF}{AH} = \frac{4}{6} = \frac{2}{3}.$$



في دارك... إتهون على قرابتة إصغارك

e) a)

Dans le triangle AMC

$N \in (AM)$

$E \in (AC)$

et $(EN) \parallel (CM)$

D'après Thalès

$$\frac{AN}{AM} = \frac{AE}{AC} = \frac{EN}{CM}$$

$$\frac{AN}{AM} = \frac{4}{6} = \frac{2}{3}$$

b) $F \in (AH)$

$N \in (AM)$

et $\frac{AN}{AM} = \frac{AF}{AH}$

D'après la réciproque du
Thalès on obtient $(FN) \parallel (HM)$

3) on a $(FN) \parallel (HM)$

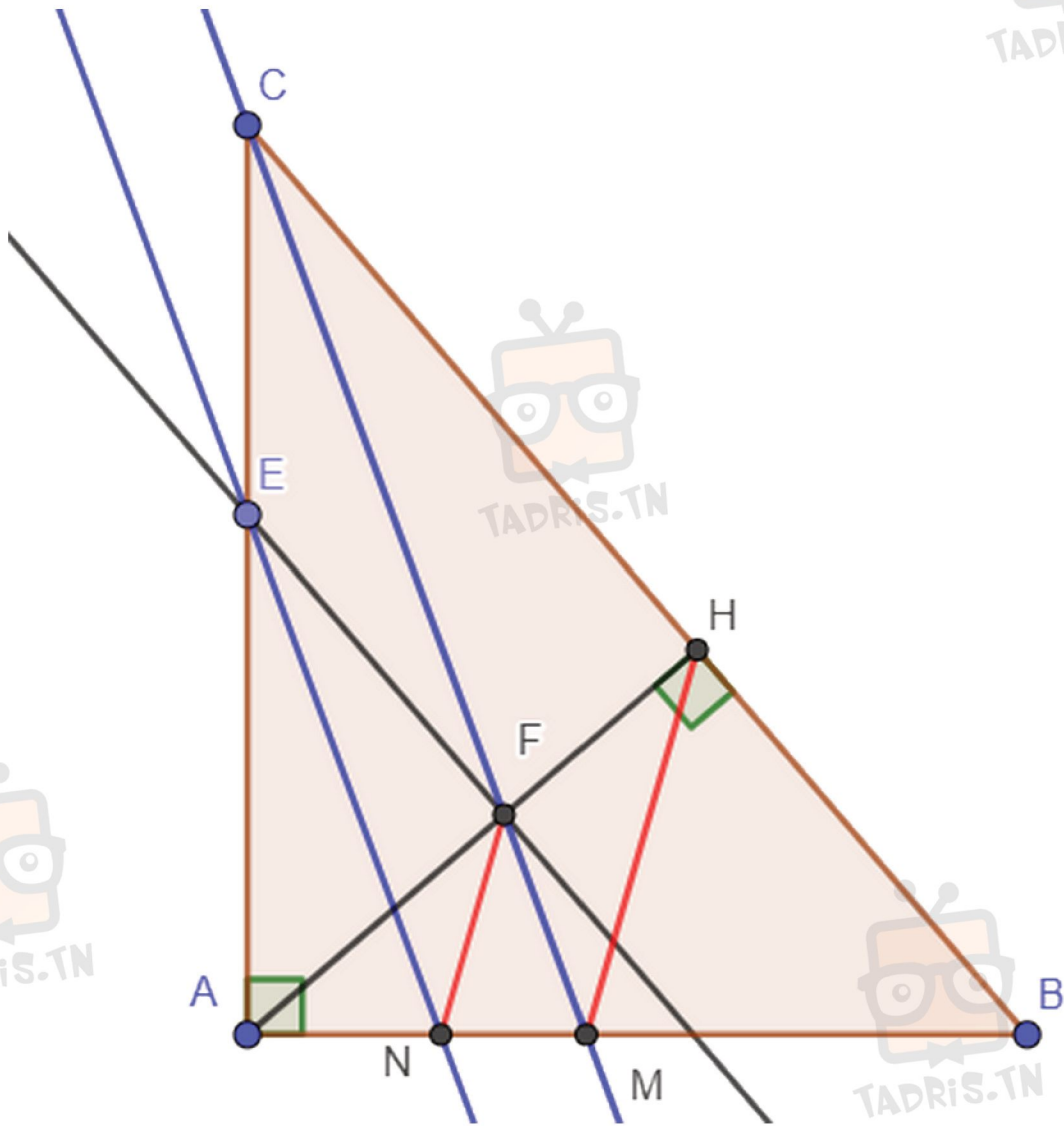
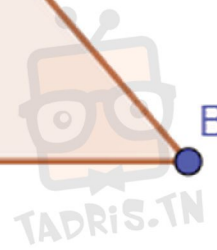
Ainsi \widehat{MHA} et \widehat{NFA} sont
deux angles correspondants

Donc $\widehat{MHA} = \widehat{NFA}$



في دارك... إتهنوخ علمو قرابتة إصغارك





في دارك... اتمنون علمي قرابتة اصفارك

