

Nom : _____

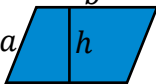
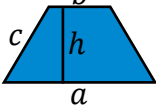
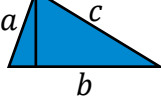
MATH 9



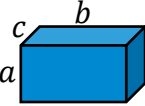
**MOCK
Final exam**

Geometry & Trigonometry

Formules pour calculer le périmètre P et l'aire A des principales figures planes :

carré	rectangle	parallélogramme	trapèze isocèle	triangle	cercle
					
$P = 4c$	$P = 2a + 2b$	$P = 2a + 2b$	$P = a + b + 2c$	$P = a + b + c$	$P = 2\pi r$
$A = c^2$	$A = ab$	$A = bh$	$A = \frac{a+b}{2}h$	$A = \frac{bh}{2}$	$A = \pi r^2$

Formules pour calculer la surface S et le volume V des principaux solides :

cube	parallélépipède	tétraèdre	cylindre	cône	sphère
					
$S = 6c^2$	$S = 2(ab + bc + ac)$	$S = \sqrt{3}c^2$	$S = 2\pi(rh + r^2)$	$S = \frac{\pi r^2}{\sin \alpha}$	$S = 4\pi r^2$
$V = c^3$	$V = abc$	$V = \frac{\sqrt{2}}{12}c^3$	$V = \pi r^2 h$	$V = \frac{\pi r^2 h}{3}$	$V = \frac{4}{3}\pi r^3$

Exercice 1 (7 points)

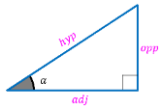
- What is the area of a square whose side is 4?
- What is the perimeter of a rectangle whose sides are 3 and 7?
- What is the volume of a sphere whose radius is 5?
- What is the surface of a cube whose side is 2?
- What is the perimeter of a circle whose radius is 6?
- What is the area of a circle whose diameter is 8?
- What is the volume of a tetrahedron whose side is 3?

$\overrightarrow{AB} = \begin{pmatrix} B_x - A_x \\ B_y - A_y \end{pmatrix}$	$\ \overrightarrow{AB}\ = \sqrt{(B_x - A_x)^2 + (B_y - A_y)^2}$
--	--

Exercice 2 (7 points) On considère les points $A(4, 2)$ et $B(12, -4)$:

- | | |
|---|--|
| a) Calculez le déplacement $\overrightarrow{AB}$: | |
| b) Calculez les coordonnées du point C tel que $\overrightarrow{AC} = \begin{pmatrix} 6 \\ 8 \end{pmatrix}$: | |
| c) Calculez $\ \overrightarrow{AB}\ $: | |
| d) Calculez $\ \overrightarrow{AC}\ $: | |
| e) Le triangle ABC est-il isocèle ? Justifier votre réponse : | |
| f) Le triangle ABC est-il équilatéral ? Justifier votre réponse : | |
| g) Le triangle ABC est-il rectangle ? Justifier votre réponse : | |

Exercice 3 (6 points) Find missing values (?) by specifying the procedure.



$\sin \alpha = \frac{opp}{hyp}$

$\cos \alpha = \frac{adj}{hyp}$

$\tan \alpha = \frac{opp}{adj}$

- | | | |
|----|--|-----------|
| a) | | ? = _____ |
| b) | | ? = _____ |
| c) | | ? = _____ |
| d) | | ? = _____ |
| e) | | ? = _____ |
| f) | | ? = _____ |