Nom :

## Test 2 Aires et volumes



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

carré	rectangle	parallélogramme	trapèze isocèle	triangle	cercle
C	a b	a h	c h a	a b	r
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
C		C	r	r	<b>K</b>
$S = 6c^2$	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)

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

Shape 1	Shape 2	Shape 3	Shape 4
2	2	$2 \xrightarrow{2} \sqrt{3} \xrightarrow{2} 4$	

## Exercice 2 (10 points)

- a) Shape 1 is a circle whose diameter is 2. What is its radius?
- b) What is the area of shape 1?
- c) What is the perimeter of shape 1?
- d) Is it true that the perimeter of shape 1 is twice its area?
- e) Shape 2 is a half circle whose diameter is 2. What is its area?
- f) What is the perimeter of shape 2?
- g) Shape 3 is a trapezoid. What is its area?
- h) What is the perimeter of shape 3?
- i) Shape 4 is a combination of shapes 2 & 3. What is its area?
- j) What is the perimeter of shape 4?

## Exercice 3 (3 points) True or false?

- a) Two shapes with the same area have always the same perimeter.
- b) The area of a shape is always smaller than its perimeter.
- c) If the radius of a circle is a round number, the area of this circle is not a round number.

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True	False