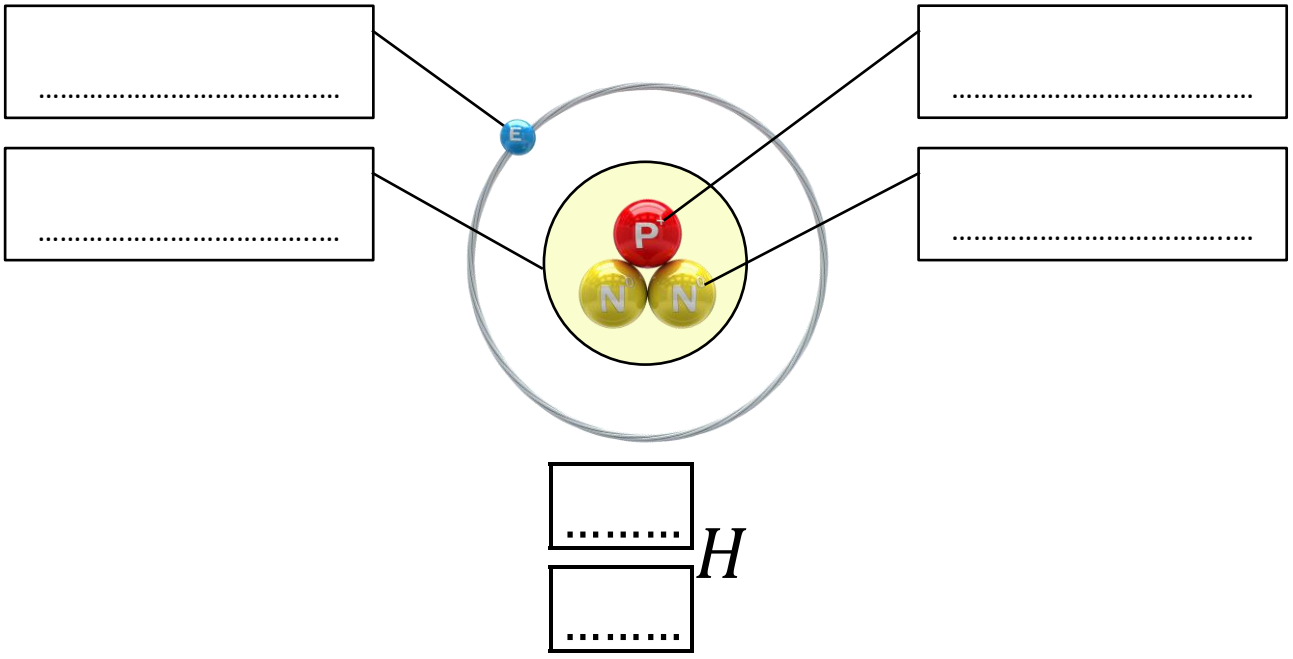
NAME : _____ PHYS 9

MOCK Test 2	Atomic structure

Le Châtelard

${}^{A}_{Z}X$	$A = Z + N$	0.001 km 1 m 1 000 mm 1 000 000 µm 1 000 000 000 nm 1 000 000 000 000 pm 1 000 000 000 000 000 fm
$r_0 = 1.2 \cdot 10^{-15}$ m	$r \cong r_0 \cdot \sqrt[3]{A}$	

Exercice 1 (6 points) Complete each label with one word (or one number):



Exercice 2 (8 points) Complete the sentences:

a) _____ are negatively charged particles.

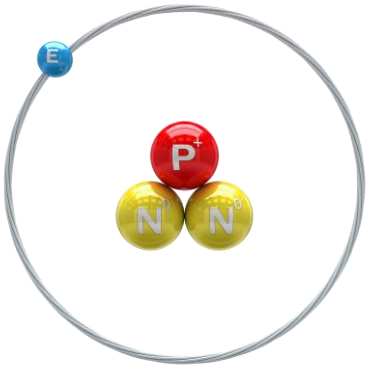
b) At the center of an atom, we find the _____ composed of particles named _____. Among them, we find the _____ and of positively charges particles named _____.

c) In an atomic symbol, the letter A represents the amount of _____, while the letter _____ denotes the amount of _____.

Exercice 3 (20 points) Complete the table with the quantity of each particle:

	atom	# nucleons	# neutrons	# protons	# electrons
a)	$^{13}_{6}C$				
b)	$^{3}_{1}H$				
c)	$^{3}_{2}He$				
d)	$^{232}_{90}Th$				
e)	$^{238}_{92}U$				

Exercice 4 (6 points) One atom of tritium $^{3}_{1}H$ (illustration below) has a diameter of 110 pm.



a) Give the diameter of this atom in fm:

b) Give the diameter of this atom in nm:

c) Estimate the radius of this atom:

Exercice 5 (BONUS) True or false?

	True	False
a) An atom always has as many protons as neutrons.		
b) The nucleus contains electrons.		
c) Two different elements always have a different atomic mass.		
d) Two different elements always have a different atomic number.		
e) Class 8A is the best at le Châtelard Institute.		