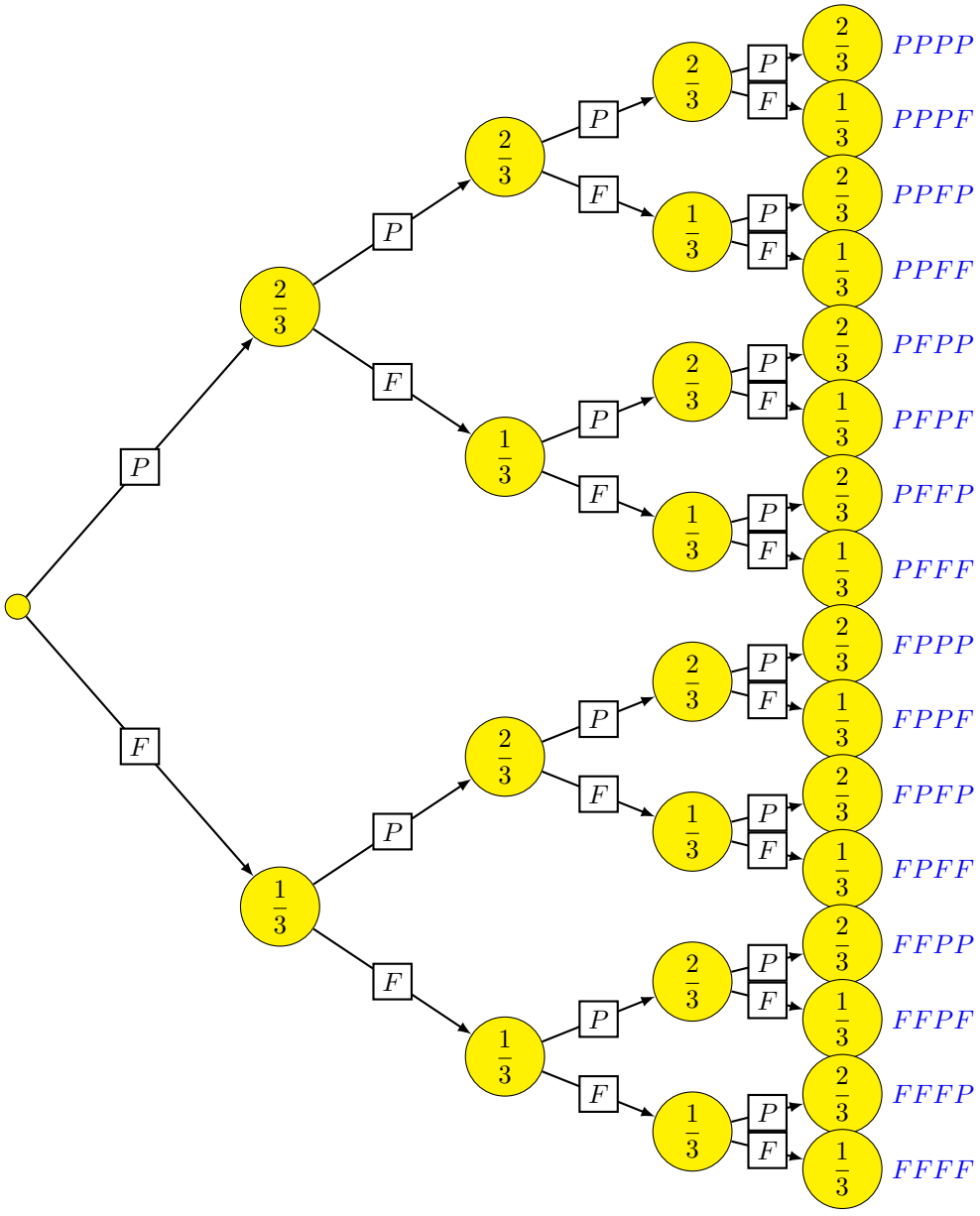
Exercices pour le jeudi 9 mars 2017 VILAIN Louis

1 EXERCICE 1



Ω(Z)	0	1	2	3	4
P(Z=Zi)	$\frac{6}{81}$	$\frac{32}{81}$	$\frac{8}{27}$	$\frac{8}{81}$	$\frac{1}{81}$

2 EXERCICE 8

1)

P(A)=0.2
P(C)=0.34
P(A∩B) = 0, 14
$P(A \cup C) = P(A) + P(C) - P(A \cap C) = 0.40$
donc : $P(A \cup C) = 1 - P(A \cup C) = 1 - 0.40 = 0.60$
donc :
$P(4) = 0.34 - 0.14 = 0.20$
$P(30) = 0.20 - 0.14 = 0.06$
$P(34) = P(A \cap B) = 0.14$

Ω(i)	0	4	30	34
P(i=xi)	0.60	0.20	0.06	0.14

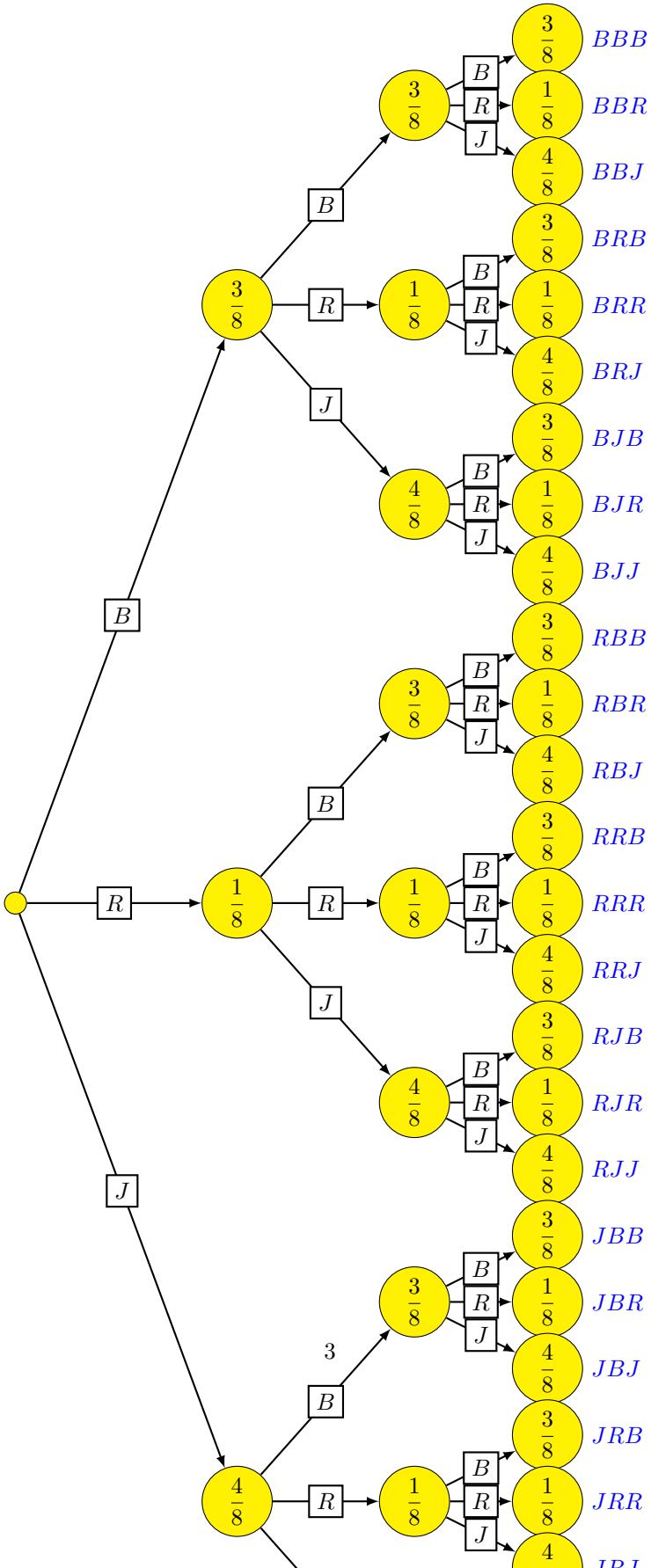
2)

a)
$B\acute{e}n\acute{e}fice = (nombre\ de\ clients * gains\ pour\ 1\ client) - d\acute{e}pense\ pour\ l'affichage$
$B = (225X) - 250$

b)
on utilise l'espérance :
$gain = E(B)$
comme vu précedemment; $E(B) = 225xE(X) - 250$
$E(X)$ =ΣPiXi=0+0.80+1.8+4.76=7.36
E(X)>0 : l'opération est rentable.
E(B)=225x7.36-250=1656-250=1406€

3 EXERCICE 2

1)


B
R
J
3/8
1/8
4/8
BBB
BBR
BBJ
BRB
BRR
BRJ
BJB
BJR
BJJ
RBB
RBR
RBJ
RRB
RRR
RRJ
RJB
RJR
RJJ
JBB
JBR
JBJ
JRB
JRR
JRJ

2)

a)

Ω(i)	0	8	20	64	1024
P(i=xi)	$\frac{348}{512}$	$\frac{72}{512}$	$\frac{64}{512}$	$\frac{27}{512}$	$\frac{1}{512}$

b)

$E(G)=\Sigma PgXg=(8x\frac{72}{512})+(20x\frac{64}{512})+(64x\frac{27}{512})+(1024x\frac{1}{512})=9$

Donc oui cette loterie est favorable à l'organisateur car 12-9=3€.