

$Y(2)=-2$

$Y(2)=0$

$Y(2)=2$

$Y(1)=1$

$$E[E[Y(3)|Y(1),Y(2)]|Y(1)]=1, \\ p=1/2$$

$Y(1)=-1$

$$E[E[Y(3)|Y(1),Y(2)]|Y(1)]=-1, \\ p=1/2$$