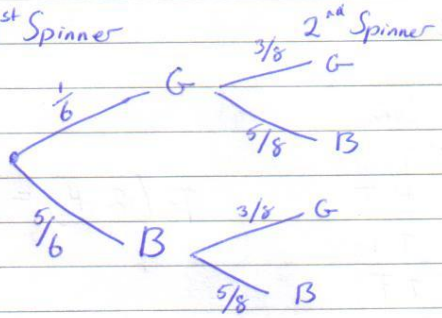
Ex 3.1

Q1

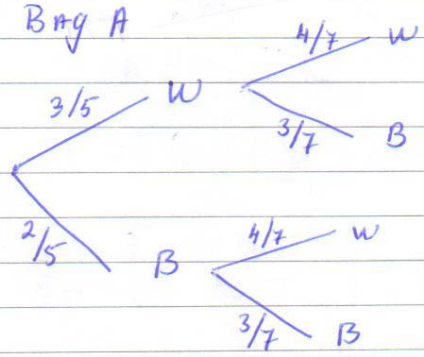
(i)



(ii) $P(BB \text{ or } GG) = \left(\frac{5}{6} \times \frac{5}{8}\right) + \left(\frac{1}{6} \times \frac{3}{8}\right)$

$= \frac{25}{48} + \frac{3}{48} = \frac{28}{48} = \frac{7}{12}$

Q3



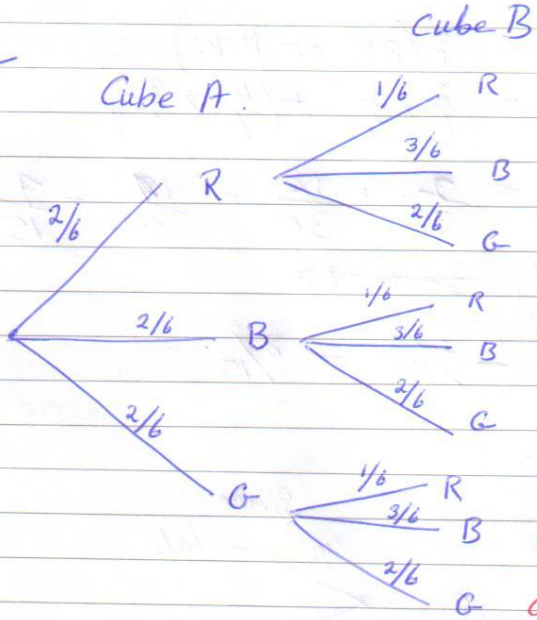
(i) $P(\text{Both W}) = \frac{3}{5} \times \frac{4}{7} = \frac{12}{35}$

(ii) $P(\text{Both B}) = \frac{2}{5} \times \frac{3}{7} = \frac{6}{35}$

(iii) $P(\text{Both W or Both B}) = \frac{12}{35} + \frac{6}{35} = \frac{18}{35}$

Q5

(i)



$RR = \frac{2}{6} \times \frac{1}{6} = \frac{2}{36} = \frac{1}{18}$

$RB = \frac{2}{6} \times \frac{3}{6} = \frac{6}{36} = \frac{1}{6}$

$RG = \frac{2}{6} \times \frac{2}{6} = \frac{4}{36} = \frac{1}{9}$

$BR = \frac{2}{6} \times \frac{1}{6} = \frac{2}{36} = \frac{1}{18}$

$BB = \frac{2}{6} \times \frac{3}{6} = \frac{6}{36} = \frac{1}{6}$

$BG = \frac{2}{6} \times \frac{2}{6} = \frac{1}{9}$

$GR = \frac{2}{6} \times \frac{1}{6} = \frac{1}{18}$

$GB = \frac{2}{6} \times \frac{3}{6} = \frac{1}{6}$

$GG = \frac{2}{6} \times \frac{2}{6} = \frac{1}{9}$

(ii) $P(\text{Both Same Colour}) =$

RR or BB or GG

$\frac{1}{18} + \frac{1}{6} + \frac{1}{9} = \frac{1}{3}$

(iii) $P(B \text{ and } G) =$

BG or GB

$\frac{1}{9} + \frac{1}{6} = \frac{5}{18}$

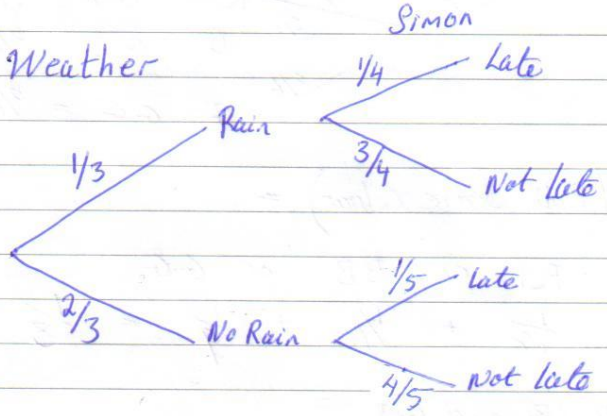
Q7 (i) $P(\text{Same}) = P(BB \text{ or } WW)$

$= \left(\frac{2}{6} \times \frac{1}{5}\right) + \left(\frac{4}{6} \times \frac{3}{5}\right)$

$= \frac{2}{30} + \frac{12}{30} = \frac{14}{30} = \frac{7}{15}$

(ii) $P(\text{Different}) = 1 - \frac{7}{15} = \frac{8}{15}$

Q9 (i) Weather

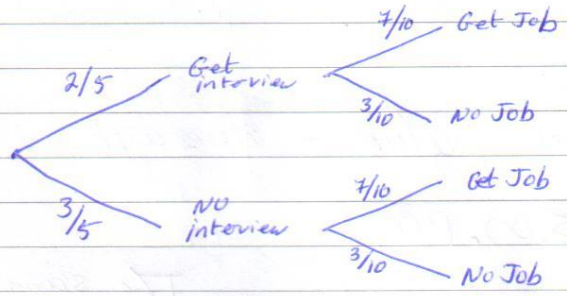


(ii) $P(\text{Late}) = P(\text{Rain + late or No Rain + late})$

$\left(\frac{1}{3} \times \frac{1}{4}\right) + \left(\frac{2}{3} \times \frac{1}{5}\right)$

$\frac{1}{12} + \frac{2}{15} = \frac{13}{60}$

Q11 Interview Job



(i) 30% = 0.3

(ii) P(~~No Job~~) = P(I + No J or No I + ~~No~~ J)

$\left(\frac{2}{5} \times \frac{3}{10}\right) + \left(\frac{3}{5} \times \frac{3}{10}\right)$

$\frac{6}{50} + \frac{9}{50} = \frac{15}{50} = \frac{3}{10}$

P (No Job) = ~~P~~ 1 − P (get Interview + Job)

$= 1 - \frac{2}{5} \times \frac{7}{10}$

$= 1 - \frac{14}{50}$

$= \frac{36}{50} = \frac{18}{25}$