

## Routine Probability Practice #2

1. The 120 Year 9 students at ABC High School are randomly allocated a language option and a technical option.
  - One-third do Maori, one-third Japanese and one-third Spanish.
  - One half do Woodwork and one-half do Metalwork.
  - a) How many do Maori but not Metalwork?
  - b) If the Metalwork teacher is also the Japanese teacher, what is the probability that a student will have that teacher?

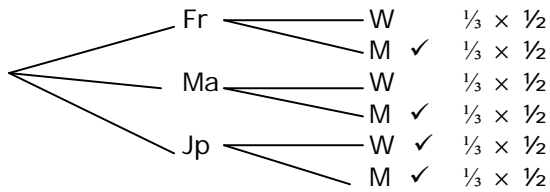
2. Some numbers from local schools are found

	Y7 Boys	Y7 Girls	Y8 Boys	Y8 Girls
St Xavier's School for Delinquents	134	123	125	129
St Ignatius' School for the Wealthy	302	297	288	293

- a) What is the probability that a student randomly selected from St Ignatius will be a girl?
  - b) What is the probability a randomly selected Y7 girl will be from St Xavier's?
  - c) A boy has been selected at random, what is the probability he is from St Xavier's?
3. Josh has a 20% chance of having a detention at lunchtime. Liam has a 15% chance of having a detention at lunchtime. What is the probability that they will both be free at lunch?
  4. Steve kicked 43 conversions last year out of 65 attempts in the round robin games.
    - a) If he played a final game where he got 8 attempts to convert, what number do you think he will most likely have got?
    - b) What is the chance that in a game he kicked the first three conversions in a row?

## Answers: Routine Probability Practice #2

1.

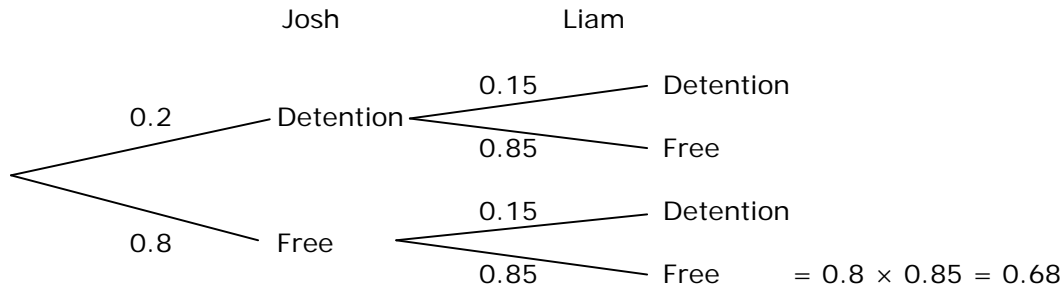


- a) Only one option is Maori but not Metalwork =  $\frac{1}{6} = 0.1667 = 16.7\%$   
 b) The four ticked options are Japanese and/or Metalwork  $\frac{4}{6} = \frac{2}{3} = 0.6667 = 66.7\%$

2.

- a)  $(297 + 293)$  girls out of  $(302 + 297 + 288 + 293) = \frac{590}{1180} = \frac{1}{2} = 0.5 = 50\%$   
 b)  $123$  St X Y7 girls out of  $(123 + 297)$  Y7 girls =  $\frac{123}{420} = \frac{41}{140} = 0.2929 = 29.3\%$   
 c)  $(134 + 125)$  St X out of  $(134 + 302 + 125 + 288)$  total boys =  $\frac{259}{849} = 0.3051 = 30.5\%$

3.



$P(\text{neither have detention}) = 0.68 = 68\% = \frac{17}{25}$

4.

43 out of 65 is a probability of  $43 \div 65 = 0.66154$

- a)  $8 \times 0.66154 = 5.29$ . But you can't kick 0.29 of a conversion, so we need to round.

He will most likely have got **5 conversions**.

- b)  $0.66154 \times 0.66154 \times 0.66154 = 0.2895 = 28.95\%$