

|  |            |                  |  |                    |     |
|--|------------|------------------|--|--------------------|-----|
| Dog Prob   | 0.5        |                  |  |                    |     |
| Cat Prob   | 0.5        |                  |  |                    |     |
|  |            |                  |  |                    |     |
| Test 1   | # Of Kids  | % of Probability |  |                    |     |
| Cat  | 3          | 30%              |  |                    |     |
| Dog  | 7          | 70%              |  |                    |     |
|  |            |                  |  |                    |     |
| Frequency  | Percentage | Decimal          |  | Factorial          |     |
| Cat  | $(.5)^3$   | 0.125            |  | $10!/(7!*(10-7)!)$ | [1] |
| Dog  | $(.5)^7$   | 0.0078125        |  | 120                |     |
|  |            |                  |  |                    |     |
| Chance 7 kids would choose a dog in a different group of 10 kids |            |                  |  |                    |     |
| 0.1171875  | 11.71%     |                  |  |                    |     |

[1] This equals  $(10 \cdot 9 \cdot 8 \cdot 7 \cdot 6 \cdot 5 \cdot 4) / (7 \cdot 6 \cdot 5 \cdot 4 \cdot 3 \cdot 2 \cdot 1)$   
 $604,800 / 5040 = 120$