I want to investigate the chances of getting each possible outcomes (0,1,2,3 goals) when taking three free shots. I would expect to get one or two goals because I play a bit and so I think I would get quite few in. I will take a break of 30 secs between sets of three and two minutes between each lot of 10. I will also ensure that I stand in the same place on the free throw line every time. To do this I will mark with masking tape where my feet are so as each time my feet are in the position. This is to try to keep the shooting conditions the same. I will also try and ensure that each time I let the basketball go that the movement is the same I think it will be as I have practice throwing free throws a lot and so my muscles have something called muscle memory so my PE teacher tells me. 50 trials should be good number, it is enough to get a reasonable set of results but not too many so that I get too tired or change the I way I throw too much.

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Number of goals	first 10	second 10	third 10	fourth 10	fifth 10	total
0	5 (0.5)	2 (0.2)	1 (0.1)	1 (0.1)	3 (0.3)	12 (0.24)
1	2 (0.2)	3(0.3)	4 (0.4)	2 (0.2)	4 (0.4)	15 (0.3)
2	2 (0.2)	4 (0.4)	4 (0.4)	4 (0.4)	2 (0.2)	16 (0.32)
3	1 (0.1)	1 (0.1)	1 (0.1)	3 (0.3)	1 (0.1)	7 (0.14)
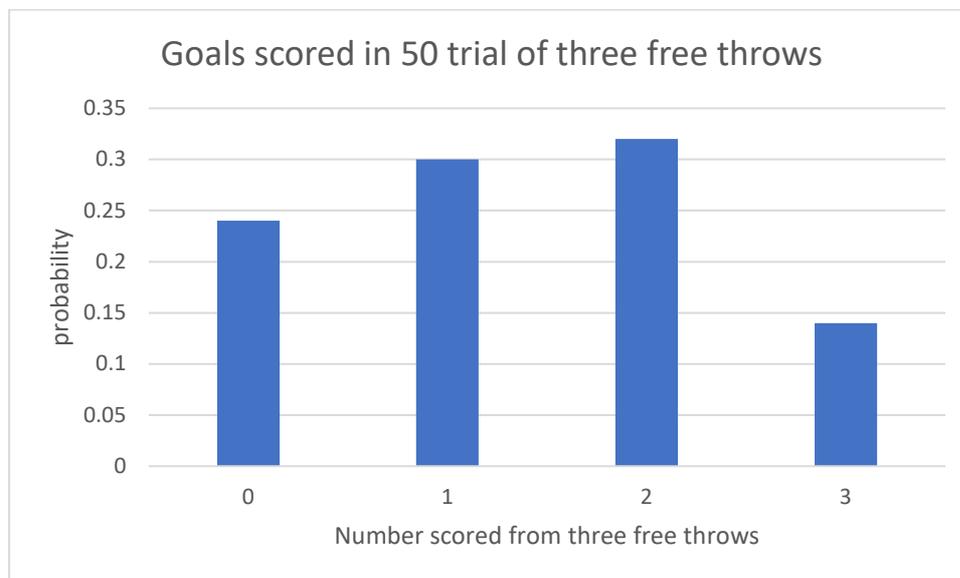
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The graph shows that the chance of getting one or two goals are about the same (0.30 and 0.32) and are greater than getting zero (0.24) or three with three being the least (0.14). I expected this because I practice a lot for my games at my free throws because when I watch the Australian basketball league they are constantly showing the players career success rate for free throws and when the game is very close in the 4th quarter the team trailing always try's and foul the person with the lowest percentage so they can get the ball back to get a field goal and either close the gap or even take the lead. So about 40% of the time throwing free throws successfully can be the difference between winning and losing a game. However, these results would only apply to me because different people have different ability. Also the table shows that as the investigation went on things changed. I improved but then went

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downhill at the end. For example, with the first 10 sets my probability of no goals was 0.5 but in fourth before I went downhill, it was 0.1. I think was because when I practice my free throws I only practice shooting two free throws. Also in a game situation you spend a lot of time running up and down the court so you are not concentrating all the time on making the free throws, whereas for this experiment I was concentrating a lot more than I usually do. On the other hand my probability of getting 3 goals from the first 10 set was 0.1 but in the fourth set it 0.3. While this pattern might seem strange it could be like a real game, you improve with more shoots but then might get tired.

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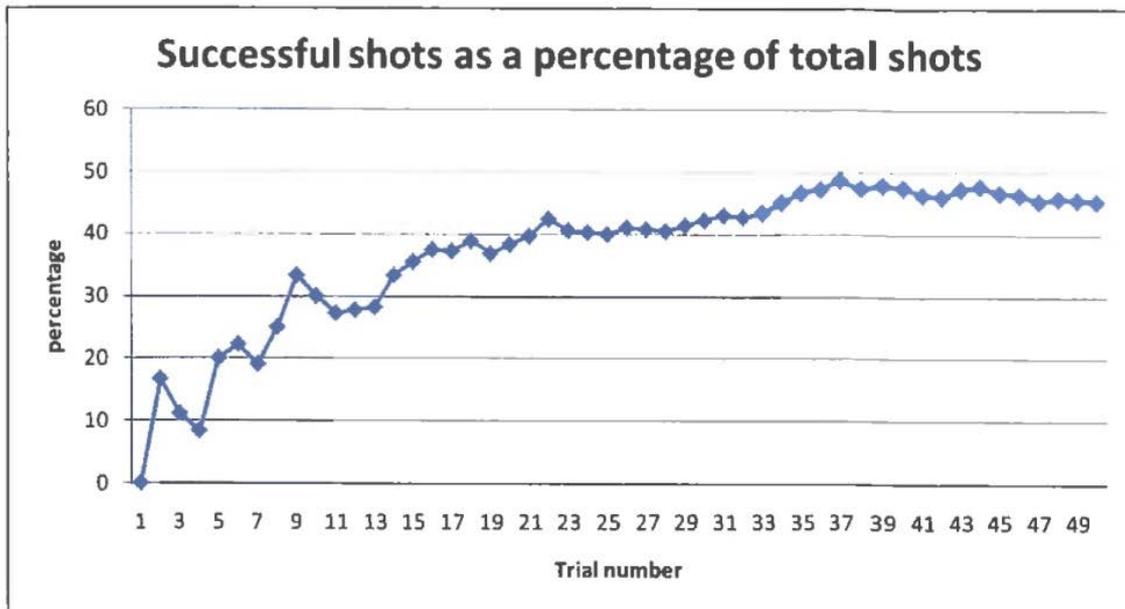
Most magazines talk about shooting percentages which is total goals as a percentage of total shots and so I did this. My percentage varied a lot early on but that is because the number of shots is small. My overall percentage is about 45% but this is increased to about trial 37 and then could be dropping, the same as in my table. I can conclude my overall percentage is about 45% but the experiment is not really like real games.

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