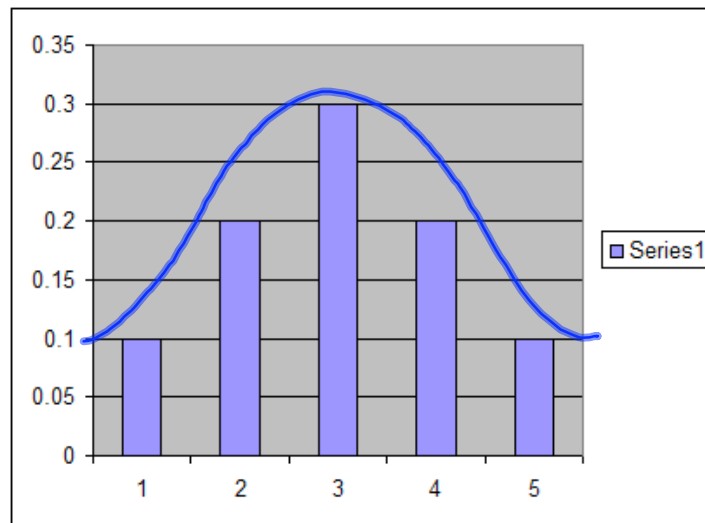


8.1 Distributions

Complete handout investigation

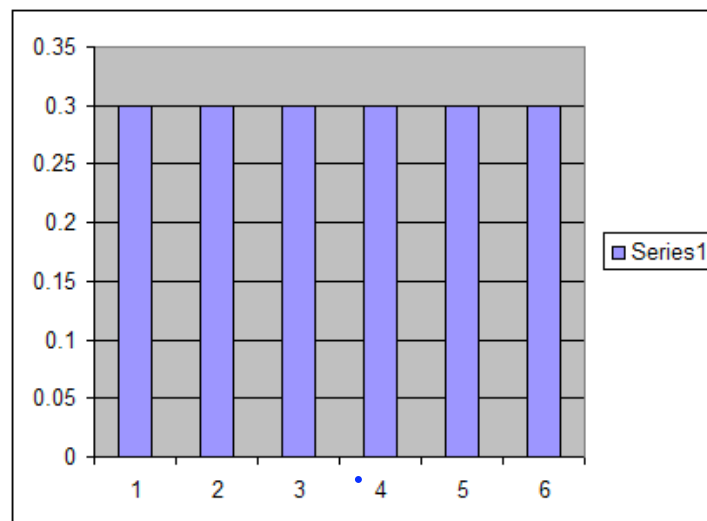
Binomial Distribution:

Is a distribution in which the probabilities are symmetrical on the left and right side



Uniform Distribution:

Is a distribution in which the probabilities of all outcomes are equal



$$P(x) = {}^nC_x (p)^x (1-p)^{n-x}$$

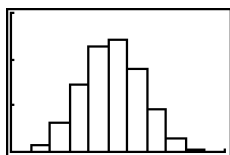
Eg 1) When a soccer player takes a shot on net they score 47% of the time. Create a binomial distribution using your graphing calculator to represent the next 10 shots on net.

Use $\text{binompdf}(10, 0.47)$ to generate ALL probabilities otherwise called a probability distribution.

```

WINDOW
Xmin=0
Xmax=11
Xscl=1
Ymin=0
Ymax=.3
Yscl=.1
Xres=1

```



- a. What is the probability of the player scoring 8 out of 10 shots?

$${}^{10}C_8 (0.47)^8 (0.53)^2 = 0.03$$

- b. What is the probability of the player scoring at least 7 of the next 10 times?

$${}^{10}C_7 (0.47)^7 (0.53)^3 = 0.09$$

$${}^{10}C_8 \dots \dots \dots = 0.03$$

$${}^{10}C_9 (0.47)^9 (0.53)^1 = 0.01$$

$${}^{10}C_{10} (0.47)^{10} (0.53)^0 = 0.0005$$

Handout 5-7
Pg. 471 1

$$\underline{\underline{0.1305}}$$