H_0: Amylase activity is not (statistically) significantly different (> or <) in the salivary gland than in the crop.

S	2	2	3	3	3	3	3	1
C	0	3	2	2	2	0	1	1
	+	-	+	+	+	+	+	=

N (number of times they differ) = 7
x (number of + or -, whichever is less) = 1

p 50% = 0.055 p5% = 0.257

The null hypothesis is rejected and **S > C** since p50% < p5%. That S > C was determined by visual inspection**.** p50% was obtained from the table of binomial probabilities online. This is the probability that the observed activity in S and C was due to chance so that the number of + and - would be equal or nearly equal. p5% (or 0.05) is obtained from the table of binomial probabilities online as the probability that the observed activity was not due to chance and these results would be found 95% of the time.

H_0: Amylase activity is not significantly different in the crop and midgut.

C	0	3	2	2	2	0	1	1	
M	3	3	2	3	2	2	3	0	N = 5
	-	=	=	-	=	-	-	+	x = 1

p 50% = 0.156 < p 5% = 0.204 **M > C**

H_0: Amylase activity is not significantly different in the midgut and hindgut.

M	3	3	2	3	2	2	3	0	
H	0	1	2	1	2	0	1	1	N = 6
	+	+	=	+	=	+	+	-	x = 1

p 50% = 0.094 < p 5% = 0.232 **M > H**

H_0: Amylase activity is not significantly different in the salivary gland and hindgut.

S	2	2	3	3	3	3	3	1	
H	0	1	2	1	2	0	1	1	N = 7
	+	+	+	+	+	+	+	=	x = 0

p 50% = 0.008 < p 5% = 0.698 **S > H**

H_0: Amylase activity is not significantly different in the salivary gland and midgut.

S	2	2	3	3	3	3	3	1	
M	3	3	2	3	2	2	3	0	N = 6
	-	-	+	=	+	+	=	+	x = 2

p 50% = 0.234 > p 5% = 0.031 **M = S**

H_0: Amylase activity is not significantly different in the crop and hindgut.

C	0	3	2	2	2	0	1	1	
H	0	1	2	1	2	0	1	1	N = 2
	=	+	=	+	=	=	=	=	x = 0

p 50% = 0.250 < p 5% = 0.902 **C > H**

Conclusion: Amylase activity: S = M > C> H.

Figure 8-4. Sample sign test to determine relative amounts of enzyme activity.