

5. Given the probability distribution below, complete the table and find

x	0	1	2	3	4	
p	0.04	0.23	0.20	0.19	0.34	
xp						
x <sup>2</sup> p						

(i)  $\mu$ , the **expected value** of  $x$

(ii)  $\sigma$ , the **standard deviation** of  $x$

7. Let  $X$  be the number of successes in 11 independent trials, where the probability of success on each trial is  $p = 0.26$

(a) Calculate  $P(X = 4)$ , showing the **binomial formula** used.  
 (Not binompdf!)

(b) Complete the probability **distribution** table for  $X$ , using formula, function or a program.

(c) Find the **mean** of the distribution.

(d) Find the **standard deviation** of the distribution.

X	

9. 75% of the patients at a certain clinic have the flu. 90% of the flu patients have a fever. 20% of the patients without flu have a fever.
- (a) Make a tree diagram with all conditional and branch tip probabilities shown.
  - (b) Find the probability that a randomly selected clinic patient has a fever.
  - (c) Find the probability that a randomly selected feverish clinic patient also has the flu.
  - (d) Make a probability Venn diagram for this problem.