Individual Practical

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1 Individual Practical 1

1.1 The First Question

Patient ID	Cholestero	Diabetes	(BMI)	Actual Coronary risk	Prediction
101	150	No	30	Yes	No
102	98	No	26	No	No
103	130	Yes	31	Yes	Yes
104	101	No	27	No	No
105	120	Yes	28	Yes	Yes
106	78	Yes	33	No	No
107	132	No	24	Yes	No
108	110	Yes	30	No	No
109	145	No	34	No	Yes
110	96	No	26	No	No

contingency table			
		Predict	
		positive	negative
Actual	positive	2	2
	negative	1	5

1.2 The Second Question

$$sensitivity = \frac{number\ of\ true\ positives}{number\ of\ true\ positives + number\ of\ false\ negatives} = \frac{1}{2} \tag{1}$$

$$specificity = \frac{number\ of\ true\ negatives}{number\ of\ true\ negatives + number\ of\ false\ positives} = \frac{5}{6} \tag{2}$$

$$FPR = \frac{FP}{FP + TN} = \frac{1}{6} \tag{3}$$

$$FNR = \frac{FN}{TP + FN} = \frac{1}{2} \tag{4}$$

2 Individual Practical 2

2.1 The First Question

	A1	A2	A3	A4	A5
A1	0	$\sqrt{37}$	$\sqrt{18}$	$\sqrt{25}$	$\sqrt{20}$
A2		0	$\sqrt{25}$	$\sqrt{2}$	$\sqrt{41}$
A3			0	$\sqrt{13}$	$\sqrt{2}$
A4				0	$\sqrt{25}$
A5					0

2.2 The Second Question

Because the Threshold t is 4.
A1->K1
D(A1,A2)>4 A2->K2
Closest distance A3 to A1,A2,D(A1,A3)>4 A3->K3
Closest distance A4 to A1,A2,A3,D(A4,A2)<4 A4->K2
Closest distance A5 to A1,A2,A3,A4,D(A5,A3)<4 A5->K3