# Homework 5 G

November 2, 2021

## Jose Carlos Munoz

12.a)

1-nearest for 5.0 are 4.9|+

|        | +  | −  |
|--------|----|----|
| Amount | 1  | 0  |

The maximum amount is for +. So it is classified as a +

3-nearest for 5.0 are 4.9|+, 5.2|−, 5.3|−

|        | +  | −  |
|--------|----|----|
| Amount | 1  | 2  |

The maximum amount is for -. So it is classified as a -

5-nearest for 5.0 are 4.9|+, 5.2|−, 5.3|−,5.5|+, 4.6|+

|        | +  | −  |
|--------|----|----|
| Amount | 3  | 2  |

The maximum amount is for +. So it is classified as a +

9-nearest for 5.0 are 4.9|+, 5.2|−, 5.3|−,5.5|+, 4.6|+,4.5|+, 3.0|−, 7.0|−,0.5|−

|        | +  | −  |
|--------|----|----|
| Amount | 4  | 5  |

The maximum amount is for -. So it is classified as a -

12.b)

1-nearest for 5.0 are 4.9|+

$$\Sigma_+ = (5 - 4.9)^{-2}$$
$$= 100$$
$$\Sigma_- = 0$$

The maximum value is for +. So it is classified as a +

3-nearest for 5.0 are 4.9|+, 5.2|−, 5.3|−

$$\Sigma_+ = (5 - 4.9)^{-2)}$$
$$= 100$$
$$\Sigma_- = (5 - 5.2)^{-2} + (5 - 5.3)^{-2}$$
$$= 36.11$$

The maximum amount is for +. So it is classified as a +

5-nearest for 5.0 are 4.9|+, 5.2|−, 5.3|−,5.5|+, 4.6|+

$$\Sigma_+ = (5 - 4.9)^{-2} + (5 - 5.5)^{-2} + (5 - 4.6)^{-2}$$
$$= 110.25$$
$$\Sigma_- = (5 - 5.2)^{-2} + (5 - 5.3)^{-2}$$
$$= 36.11$$

The maximum amount is for +. So it is classified as a +

9-nearest for 5.0 are $4.9|+$, $5.2|-$, $5.3|-$, $5.5|+$, $4.6|+$, $4.5|+$, $3.0|-$, $7.0|-$, $0.5|-$

$$\begin{aligned}
\Sigma_+ &= (5-4.9)^{-2} + (5-5.5)^{-2} + (5-4.6)^{-2} + (5-4.5)^{-2} \\
&= 114.25 \\
\Sigma_- &= (5-5.2)^{-2} + (5-5.3)^{-2} + (5-3.0)^{-2} + (5-7.0)^{-2} + (5-0.5)^{-2} \\
&= 36.7
\end{aligned}$$

The maximum amount is for +. So it is classified as a +

13)