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Lesson 2: Practice Quiz

Puntos totales 5

1. The method of maximum likelihood gives the same parameter estimates as the method of least squares for any measurement noise distribution.

1 / 1 punto

☐ True

☒ False

✓ **Correcto**

Correct! The noise must be from the Gaussian family.

2. The product of several Gaussian PDFs with identical variances is also Gaussian.

1 / 1 punto

☒ True

☐ False

✓ **Correcto**

Correct! We used this fact to derive the connection between maximum likelihood and least squares.

3. The least squares criterion is robust to outliers.

1 / 1 punto

☐ True

☒ False

✓ **Correcto**

Correct! Least squares is particularly sensitive to outliers due to the use of squared errors!

4. For a scalar Gaussian random variable, what is the form of the full log likelihood function?

1 / 1 punto

☒ $-\frac{1}{2} \log(2\pi) - \frac{1}{2} \log(\sigma^2) - \frac{1}{2\sigma^2} (x - \mu)^2$

☐ $-\frac{1}{2} \log(2\pi) + \frac{1}{2} \log(\sigma) - \frac{1}{2\sigma^2} (x - \mu)^2$

✓ **Correcto**

Correct!

5. True or False, $\operatorname{argmin}_x f(x) = \operatorname{argmax}_x f(-x)$.

1 / 1 punto

☐ True

☒ False

✓ **Correcto**

Correct! $\operatorname{argmin}_x f(x) = \operatorname{argmax}_x -f(x)$.