

1. Suppose we're predicting the **price** of a house based on its **size** (number of square feet), **latitude**, and **longitude**. We have a training set of 1000 houses.
 - a. This is a (**circle one**) regression / classification problem.
 - b. X .shape = _____ y .shape = _____

 2. Recall that **matrix multiplication** does a bunch of dot products at once: if A .shape = (s1, s2) and B .shape = (s3, s4), then the matrix multiplication $A @ B$ has shape s1, s4 and only works if $s2 == s3$.
Suppose we compute a predicted price by using $y_pred = X @ w$, **where X has the shape you wrote above**.
What shape must w have?
 w .shape = _____

 3. **Cross-Entropy**: Suppose the ABC classifier predicts probabilities $p = [0.25, 0.25, 0.5]$ (corresponding to A, B, and C respectively) for a single example. *Use log base 2 so you can do the math in your head.*
 - a. What is the categorical cross-entropy loss if the true class is A?
 - b. What is the categorical cross-entropy loss if the true class is C?
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Before you leave, pick a couple of these questions to react to:

1. What was the most important concept from today for you?
2. What was the muddiest concept today?
3. How does what we did today connect with what you've learned before?
4. What would you like to review or clarify next time we meet?
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