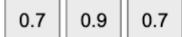
1.	Which of the following is a segmentation task?	1 point
	Determining which areas of the brain have tumor from an MRI	
	O Determining whether a brain tumor is present in an MRI	
	None of the above	
	O Determining whether there is a mass in a chest X-ray	
2.	What is the MAIN disadvantage of processing each MRI slice independently using a 2D segmentation model (as mentioned in the lecture)?	1 point
	Hint: watch the lecture video "Segmentation" to help you answer this question.	
	It is difficult to register slices of MRI models	
	O You lose some context between slices	
	O 3D models are always better than 2D models	
	None of the above	
3.	The U-net consists of	1 point
	Just a contracting path	
	A contracting path followed by an expanding path	
	An expanding path followed by a contracting path	
	Just an expanding path	
4.	Which of the following data augmentation is most effective for MRI sequences?	1 point
	Shuffling the slices	
	Shifting each pixel to the right by a constant amount with wrap around	
	Rotation	
	Randomly shuffle the pixels in each slice	

$$L(P,G) = 1 - \frac{2\sum_{i=1}^{n} p_{i}g_{i}}{\sum_{i=1}^{n} p_{i}^{2} + \sum_{i=1}^{n} g_{i}^{2}}$$

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6. Look at the output of model 1 and model 2:

1 point

	P1	
0.3	0.7	0.3
0.7	0.9	0.7
0.3	0.7	0.3

P2

	G	
0	1	0
1	1	1
0	1	0

Which one will have a lower soft dice loss?

Hint: Notice the prediction scores of P1 and P2 on the pixels where the ground truth is 1. This may help you focus on certain parts of the soft dice loss formula:

$$L(P,G) = 1 - \frac{2\sum_{i=1}^{n} p_{i}g_{i}}{\sum_{i=1}^{n} p_{i}^{2} + \sum_{i=1}^{n} g_{i}^{2}}$$

	They will be the same	
	Model 2 has a smaller loss	
	None of the above	
	Model 1 has a lower loss	
7.	What is the minimum value of the soft dice loss?	1 point
	$L(P,G) = 1 - \frac{2\sum_{i=1}^{n} p_{i}g_{i}}{\sum_{i=1}^{n} p_{i}^{2} + \sum_{i=1}^{n} g_{i}^{2}}$	
	O 0	
	O 4	
	infinity	
	O 1	
8.	An X-ray classification model is developed on data from US hospitals and is later tested on an external dataset from Latin America. Which if the following do you expect?	1 point
	None of the above	
	O Performance remains unchanged	
	O Performance improves on the new dataset	
	O Performance drops on the new dataset	
9.	Which of the following is an example of a prospective study?	1 point
	A model is trained and tested on a dataset of X-rays collected between 2001 and 2010	
	None of the above	
	A model is deployed for 1 year in an emergency room and its performance over that time is evaluated	

A model is trained on data collected between 2001 and 2010 and then validated on data collected between 2011 and 2013