STAT3007/7007 Deep Learning, Tutorial 10
2022 Semester 2

1. (Activation functions) For each activation function in the table below, determine its saturation region, and whether exponentiation is required.

Name	Saturation region	Requires exponentiation?
ReLU		
ELU		
SELU		
sigmoid		
tanh		

2. (Architecture designs)

   (a) Which of the following architectures make use of shortcut connections? (i) AlexNet, (ii) VGGNet, (iii) ResNet, (iv) HighwayNet.

   (b) Explain how the attention mechanism can be implemented in neural networks.

   (c) Which of the following problems may benefit from the use of the attention mechanism? (i) Image captioning, (ii) machine translation, (iii) object detection.