Section 1-2

* What are the **advantages of deep learning** compared to traditional machine learning methods in terms of finding good representations?
* What are the difference between **multi-task learning** and **transfer learning** in terms of knowledge reuse? What questions shall we consider when conducting transfer learning/multi-task learning?

Section 3

* Categorize the priors in Chapter 3.1 into groups and explain why.
* What is the authors' view on good representations? (Answer in one sentence)
* Why do we want to obtain **invariant** features in deep learning?
* What practical techniques have we used in CNN to construct abstract representations? And what practical techniques have we used in CNN to effectively train very deep networks?
* What’s the difference between learning invariant features and learning to disentangle factors of variations?

Section 4-5

* What are the c*onnections* between representation learning based on probability model and that representation learning based on neural network?

Open Questions

* What are some other priors for good learning representations?
* What remaining questions do you have after reading this paper?