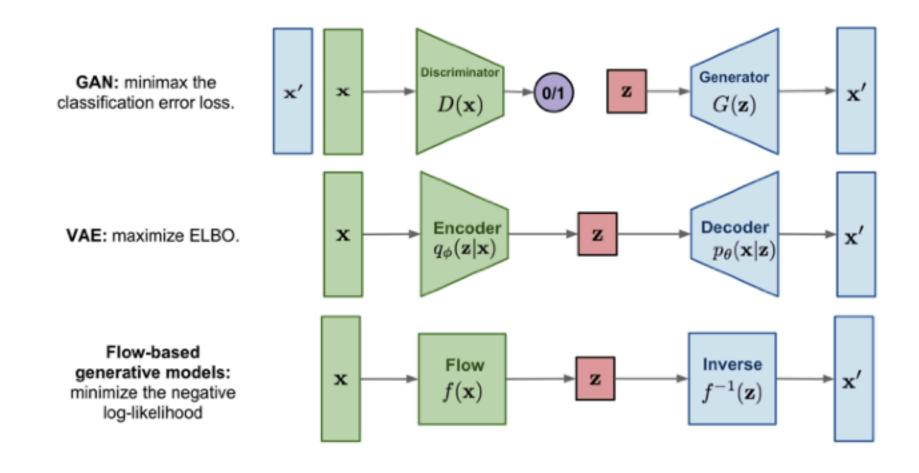
Generative models



Change of variable

• 먼저 single variable에 대해서

$$\int p(x)dx = \int \pi(x)dz = 1 \tag{1}$$

$$p(x) = \pi(z) \left| \frac{dz}{dx} \right| \tag{2}$$

$$= \pi(f^{-1}(x))|\frac{df^{-1}}{dx}| \tag{3}$$

$$= \pi(f^{-1}(x))|(f^{-1})'(x)| \tag{4}$$

• 이를 multivariable에 나타내면

$$p(oldsymbol{X}) = \pi(oldsymbol{Z}) |\det rac{doldsymbol{Z}}{doldsymbol{X}} = \pi(f^{-1}(oldsymbol{X})) |\det rac{df^{-1}}{doldsymbol{X}}|$$