1. $m_1(\mu) = Normal(\mu \mid 0,\ 10^2)$

3. $m_3(\mu) = m_1(\mu) = Normal(\mu \mid 0,\ 10^2)$

10. $m_{10}(\sigma^2) = Inverse\text{–}Gamma(\sigma^2 \mid 1,\ 1)$

8. $m_8(\sigma^2) = m_{10}(\sigma^2) = Inverse\text{–}Gamma(\sigma^2 \mid 1,\ 1)$

6. $m_6(x) = 1$

5. $$m_5(x) = \int_0^\infty \int_{-\infty}^\infty factor \times m_3(\mu)\, m_8(\sigma^2)\, d\mu\, d\sigma^2$$

$$= \int_0^\infty \int_{-\infty}^\infty Normal(x \mid \mu, \sigma^2)\, Normal(\mu \mid 0,\ 10^2)\, Inverse\text{–}Gamma(\sigma^2 \mid 1,\ 1)\, d\mu\, d\sigma^2$$

$$= \int_0^\infty Normal(x \mid 0, \sigma^2 + 10^2)\, Inverse\text{–}Gamma(\sigma^2 \mid 1,\ 1)\, d\sigma^2$$

(Can't perform integral.)

4. $$m_4(\mu) = \int_0^\infty \int_{-\infty}^\infty factor \times m_6(x)\, m_8(\sigma^2)\, dx\, d\sigma^2$$

$$= \int_0^\infty \int_{-\infty}^\infty Normal(x \mid \mu, \sigma^2)\, Inverse\text{–}Gamma(\sigma^2 \mid 1,\ 1)\, dx\, d\sigma^2$$

$$= 1$$

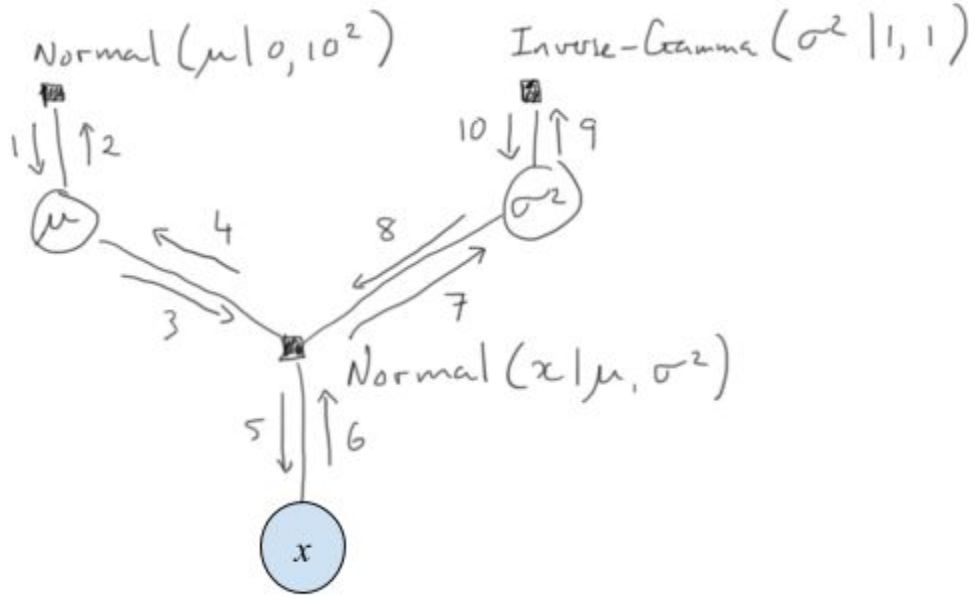
2. $m_2(\mu) = m_4(\mu) = 1$

7. $$m_7(\sigma^2) = \int_{-\infty}^\infty \int_{-\infty}^\infty factor \times m_6(x)\, m_3(\mu)\, dx\, d\mu$$

$$= \int_{-\infty}^\infty \int_{-\infty}^\infty Normal(x \mid \mu, \sigma^2)\, Normal(\mu \mid 0,\ 10^2)\, dx\, d\mu$$

$$= 1$$

9. $m_9(\sigma^2) = m_7(\sigma^2) = 1$


Normal $(\mu \mid 0, 10^2)$
Inverse-Gamma $(\sigma^2 \mid 1, 1)$
1
2
10
9
μ
σ^2
4
8
3
7
Normal $(x \mid \mu, \sigma^2)$
5
6
x