Estimates and true values

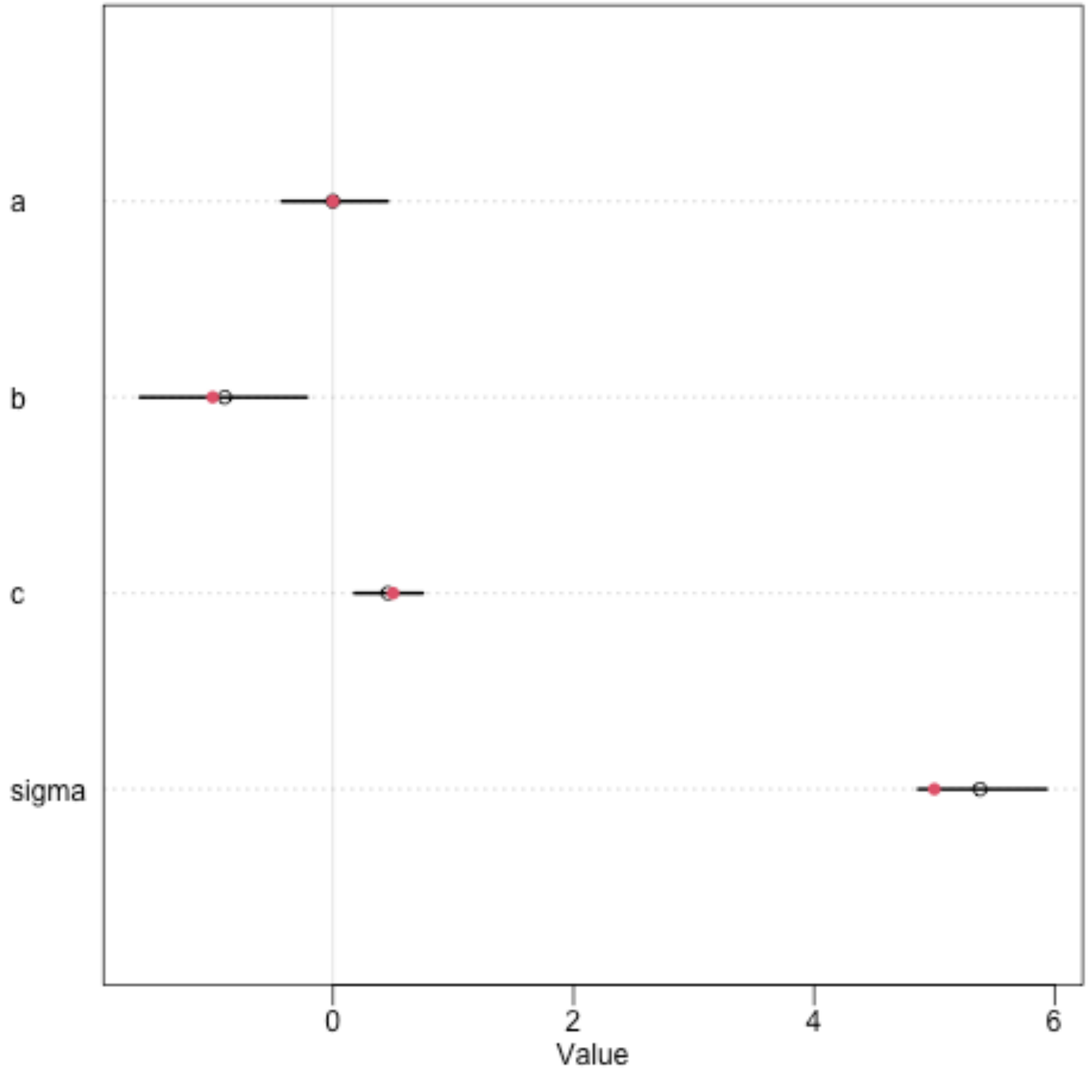
Simulation:

$$age_i = Uniform(0,\ 50)$$
$$toxin_i = Normal(10 + 0.4 \times age_i,\ 1)$$
$$size_i = Normal(30 - 1 \times toxin_i + 0.5 \times age_i,\ 5)$$

Model:

$$size_i \sim Normal(\mu_i, \sigma)$$
$$\mu_i = a + b \times toxin_i\ +\ c \times age$$

Exercise: What happens if we don't include age?



If your model does not work on **simulated** data, it will **never** work on **real** data!