

# Solving Problems Using Elimination

We keep ~~our~~ two equations,  $B + I = 6$  and  $10B + 40I = 120$ . Using elimination, we cancel out one variable to solve for the other.

- Write out both equations, one under the other:

$$\begin{array}{r} B + I = 6 \\ 10B + 40I = 120 \end{array}$$

- Pick a variable to solve for (you eliminate the other!). Let's solve for B. We will do this by multiplying by -40, in order to make the I's cancel out:

$$\begin{array}{r} -40(B + I = 6) \\ 10B + 40I = 120 \\ \hline -40B - 40I = -240 \\ + \quad 10B + 40I = 120 \\ \hline -30B = -120 \\ \frac{-30B}{-30} = \frac{-120}{-30} \end{array}$$

Add the two eqns down

$$\boxed{B = 4} \quad \text{We bought 4 budgies.}$$

- Now plug  $B = 4$  in into eqn. 1:

$$\begin{array}{r} B + I = 6 \\ 4 + I = 6 \\ -4 \quad \quad -4 \end{array}$$

$$\boxed{I = 2} \quad \text{We bought 2 iguanas.}$$