Solutions to Past Paper Questions – Simultaneous Equations

8) $\textit{Eqn 1} \times 3 \Rightarrow 12x + 3y = 24$
$\textit{Eqn 2} \quad \Rightarrow 2x - 3y = 11$
$\textit{Add} \quad \Rightarrow 14x = 35$
$\Rightarrow x = 2.5$

$\textit{Sub in eqn 2} \Rightarrow 5 - 3y = 11$
$\Rightarrow -3y = 6$
$\Rightarrow y = -2$

9) Eqn (2) × 3 ⇒ $6x - 3y = 24$
Eqn(1) + Eqn (2) ⇒ $7x = 14$
So $x = 2$
Subst in eqn (1) ⇒ $2 + 3y = -10$
So $3y = -12$ and $y = -4$

11) Eqn 1 × 2 $\Rightarrow 4x + 6y = -6$
Eqn 2 × 3 $\Rightarrow 9x - 2y = 84$
Add: $13x = 78$
$x = 6$ and $y = -5$

9) $2x + 5y = -1 \quad \rightarrow 2x + 5y = -1$
$6x - y = 5 \quad (\times 5) \quad \rightarrow 30x - 5y = 25$
$\text{(add)} \quad \rightarrow 32x = 24$
$\rightarrow x = \frac{24}{32} = 0.75$
(substitute in eqn 1) $\rightarrow 1.5 + 5y = -1$
$\rightarrow 5y = -2.5$
$\rightarrow y = -0.5$