Solutions

Each answer shows the steps, then the **result**.

2.1

- $\alpha + \beta = 7$, $\alpha\beta = 10$

2.2

- $\alpha^2 + \beta^2 = (\alpha + \beta)^2 - 2\alpha\beta = 49 - 20 = 29$

3.1 A

- $\alpha + \beta + \gamma = -\dfrac{-3}{2} = \dfrac{3}{2}$

3.2

(a)

- $\sum \alpha = 4$, $\sum \alpha\beta = 5$, $\alpha\beta\gamma = 2$

(b)

- $\sum \alpha^2 = (\sum \alpha)^2 - 2\sum \alpha\beta = 16 - 10 = 6$

3.3

- $\dfrac{1}{\alpha} + \dfrac{1}{\beta} = \dfrac{\alpha + \beta}{\alpha\beta} = \dfrac{-3}{-1} = 3$; $\dfrac{1}{\alpha\beta} = \dfrac{1}{-1} = -1$; new equation $x^2 - 3x - 1 = 0$