



## Exercise 2E

Question 28:

$$\begin{aligned} & (ax + by)^2 + (bx - ay)^2 \\ &= a^2x^2 + b^2y^2 + 2abxy + b^2x^2 + a^2y^2 - 2abxy \\ &= a^2x^2 + b^2y^2 + b^2x^2 + a^2y^2 \\ &= a^2x^2 + b^2x^2 + b^2y^2 + a^2y^2 \\ &= x^2(a^2 + b^2) + y^2(a^2 + b^2) \\ &= (a^2 + b^2)(x^2 + y^2) \end{aligned}$$

Question 29:

$$\begin{aligned} & a(a + b - c) - bc \\ &= a^2 + ab - ac - bc \\ &= a(a + b) - c(a + b) \\ &= (a - c)(a + b) \end{aligned}$$

Question 30:

$$\begin{aligned} & a(a - 2b - c) + 2bc \\ &= a^2 - 2ab - ac + 2bc \\ &= a(a - 2b) - c(a - 2b) \\ &= (a - 2b)(a - c) \end{aligned}$$

Question 31:

$$\begin{aligned} & a^2x^2 + (ax^2 + 1)x + a \\ &= a^2x^2 + ax^3 + x + a \\ &= ax^2(a + x) + 1(x + a) \\ &= (ax^2 + 1)(a + x) \end{aligned}$$

\*\*\*\*\* END \*\*\*\*\*