A1

$3x^2 + 18x + 24$

A2

$-x^2 + 4x - 3$

A3

$4x^2 - 24x + 36$

A4

$2x^2 - 2x - 12$

B1

$2(x + 2)(x - 3)$

B2

$4(x - 3)^2$

B3

$3(x + 2)(x + 4)$

B4

$-(x - 1)(x - 3)$

C1

$(1 - x)(x - 3)$

C2

$(x + 2)(3x + 12)$

C3

$(2x + 4)(x - 3)$

C4

$(2x - 6)^2$