Year 10 Factorize by Completing the Square

5 Factorise by completing the square.

a x^2+4x+1	**b** x^2+6x+2	**c** x^2+2x-4	**d** $x^2+10x-4$
e $x^2-8x+13$	**f** $x^2-12x+10$	**g** x^2-4x-3	**h** x^2-8x-5

6 Factorise, if possible.

a $x^2+6x+11$	**b** x^2+4x+7	**c** x^2+8x+1	**d** x^2+4x+2
e $x^2+10x+3$	**f** x^2+4x-6	**g** $x^2-10x+30$	**h** x^2-6x+6
i $x^2-12x+2$	**j** x^2-2x+2	**k** x^2-8x-1	**l** x^2-4x+6

7(½) 7–8(½) 7–9(½)

7 Factorise the following.

a x^2+3x+1	**b** x^2+7x+2	**c** x^2+5x-2	**d** x^2+9x-3
e $x^2-3x+\frac{1}{2}$	**f** $x^2-5x+\frac{1}{2}$	**g** $x^2-5x-\frac{3}{2}$	**h** $x^2-9x-\frac{5}{2}$

8 Factorise by first taking out the common factor.

a $2x^2+12x+8$	**b** $3x^2+12x-3$	**c** $4x^2-8x-16$
d $3x^2-24x+6$	**e** $-2x^2-4x+10$	**f** $-3x^2-30x-3$
g $-4x^2-16x+12$	**h** $-2x^2+16x+4$	**i** $-3x^2+24x-15$

9 Factorise the following.

a $3x^2+9x+3$	**b** $5x^2+15x-35$	**c** $2x^2-10x+4$
d $4x^2-28x+12$	**e** $-3x^2-21x+6$	**f** $-2x^2-14x+8$
g $-4x^2+12x+20$	**h** $-3x^2+9x+6$	**i** $-2x^2+10x+8$

Factorise these expressions. Use fractions, not decimals.

a x^2+3x+1	**b** x^2+7x+9
c x^2-x-4	**d** x^2-5x+5
e x^2+5x-2	**f** x^2+x-5
g $x^2-9x+13$	**h** x^2-3x-2
i x^2-7x-1	**j** x^2-x-7

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