BASIC POLYNOMIALS

Write the expansion of the following.

1 $(x+5)(x+1)$

$= x^2+x+5x+5$

$= x^2+6x+5$

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

$= x^2-3x-2x+6$

$= x^2-5x+6$

3 $(a-3)(a+4)$

$= a^2+4a-3a-12$

$= a^2+a-12$

4 $(x-2)^2$

$= x^2-4x+4$

5 $(y+7)^2$

$= y^2+14y+49$

6 $(2x+3)(x+5)$

$= 2x^2+10x+3x+15$

$= 2x^2+13x+15$

7 $(3x-4)(x-2)$

$= 3x^2-6x-4x+8$

$= 3x^2-10x+8$

8 $(3m+7)(2m-1)$

$= 6m^2-3m+14m-7$

$= 6m^2+11m-7$

9 $(3x+2)(3x+2)$

$= 9x^2+6x+6x+4$

$= 9x^2+12x+4$

10 $(2p-9)(2p+9)$

$= 4p^2+18p-18p-81$

$= 4p^2-81$

11 $(3x+2)(2x+3)$

$= 6x^2+9x+4x+6$

$= 6x^2+13x+6$

12 $(4p-5)^2$

$= 16p^2-40p+25$

19 $(x^2+5)(x^2-2x-3)$

$= x^4-2x^3-3x^2$
$+5x^2-10x-15$

$= x^4-2x^3+2x^2$
$-10x-15$

20 $(x-2)(x+2)(x+2)$

$= (x^2-4)(x+2)$

$= x^3+2x^2-4x-8$

21 $(x^2-y^2)^3$

$= (x^2-y^2)(x^4-2x^2y^2+y^4)$

$= x^6-2x^4y^2+x^2y^4-y^2x^4$
$+2x^2y^4-y^6$

$= x^6+3x^2y^4-3x^4y^2-y^6$

22 The correct expansion of $\left(\sqrt{x}+\sqrt{y}\right)^2$ is:

A $x^2+2xy+y^2$ B $x+y+2xy$ **C** $x+y+2\sqrt{xy}$ D $x^2+y^2+2\sqrt{xy}$

$(\sqrt{x}+\sqrt{y})^2 = x+2\sqrt{x}\sqrt{y}+y = x+2\sqrt{xy}+y$ as $\sqrt{x}\sqrt{y}=\sqrt{xy}$

23 Indicate whether each answer is a correct or incorrect factorisation of $x^2-4xy+4y^2$.

(a) $(x+2y)^2$ **(b)** $(2y-x)^2$ (c) $(2x-y)^2$ **(d)** $(x-2y)^2$