GENMATHS RESOURCES

EXPANDING DOUBLE BRACKETS

Task 1 – Expand and fully simplify.

1) $(x+4)(x+3) = \mathbf{x^2+7x+12}$

2) $(y+6)(y+4) = \mathbf{y^2+10y+24}$

3) $(h+2)(h+5) = \mathbf{h^2+7h+10}$

4) $(x+5)(x+1) = \mathbf{x^2+6x+5}$

5) $(a+4)(a-3) = \mathbf{a^2+a-12}$

6) $(d+1)(d-7) = \mathbf{d^2-6d-7}$

7) $(m+9)(m-10) = \mathbf{m^2-m-90}$

8) $(x+7)(x-5) = \mathbf{x^2+2x-35}$

9) $(u-3)(u-3) = \mathbf{u^2-6u+9}$

10) $(s+5)(s-5) = \mathbf{s^2-25}$

11) $(g+1)(g-12) = \mathbf{g^2-11g-12}$

12) $(x+11)(x+13) = \mathbf{x^2+24x+143}$

Task 2 – Expand and fully simplify.

13) $(2x+1)(x+3) = \mathbf{2x^2+7x+3}$

14) $(3x+2)(x+8) = \mathbf{3x^2+26x+16}$

15) $(2x+3)(x+6) = \mathbf{2x^2+15x+18}$

16) $(2y-7)(y+4) = \mathbf{2y^2+y-28}$

17) $(a+2)(4a-3) = \mathbf{4a^2+5a-6}$

18) $(2b+3)(3b-8) = \mathbf{6b^2-7b-24}$

19) $(2w+1)(2w-1) = \mathbf{4w^2-1}$

20) $(3v-1)(2v-7) = \mathbf{6v^2-23v+7}$

21) $(10k+1)(3k-3) = \mathbf{30k^2-27k-3}$

22) $(2x-5)(5x-3) = \mathbf{10x^2-31x+15}$

23) $(12r+5)(6r-3) = \mathbf{72r^2-6r-15}$

24) $(7a-5)(6a-15) = \mathbf{42a^2-135a+75}$

Challenge

25) **Expand and fully simplify**

$$(x+2)(x-3)+(x+3)(x-4)$$
$$= (x^2-3x+2x-6)+(x^2-4x+3x-12)$$
$$= (x^2-x-6)+(x^2-x-12)$$
$$= \mathbf{2x^2-2x-18}$$

26) **Expand and fully simplify**

$$(x+a)(x-b)+(x+a)(x-b)$$
$$= (x^2-bx+ax-ab)+(x^2-bx+ax-ab)$$
$$= \mathbf{2x^2+2ax-2bx-2ab}$$

27) **Expand and fully simplify**

$$(x+5)(x-4)-(x+4)(x-3)$$
$$= (x^2-4x+5x-20)-(x^2-3x+4x-12)$$
$$= (x^2+x-20)-(x^2+x-12)$$
$$= \mathbf{-8}$$

28) **A rectangle has a width of $(2x+5)$ cm. Given that the length is 3 cm longer than the width, and the area of the rectangle is 208 cm², show that**

$$4x^2+26x-168=0$$

$$(2x+5)(2x+8) = 208$$
$$4x^2+16x+10x+40 = 208$$
$$4x^2+26x+40 = 208$$
$$\mathbf{4x^2+26x-168=0}$$