EXPANDING BINOMIALS

Answer all of these questions. Remember to show your working out in all questions.

MAIN QUESTIONS

1.

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

> $x^2 + 5x + 6$

2.

$(x + 4)(x + 1)$

> $x^2 + 5x + 4$

3.

$(x + 5)(x + 2)$

> $x^2 + 7x + 10$

4.

$(x + 3)(x + 7)$

> $x^2 + 10x + 21$

5.

$(x + 6)(x + 4)$

> $x^2 + 10x + 24$

6.

$(x + 8)(x + 9)$

> $x^2 + 17x + 72$

7.

$(x + 10)(x + 11)$

> $x^2 + 21x + 110$

8.

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

> $x^2 - 5x + 6$

9.

$(x - 4)(x - 1)$

> $x^2 - 5x + 4$

10.

$(x - 5)(x - 2)$

> $x^2 - 7x + 10$

11.

$(x - 3)(x - 7)$

> $x^2 - 10x + 21$

12.

$(x - 6)(x - 4)$

> $x^2 - 10x + 24$

13.

$(x - 8)(x - 9)$

> $x^2 - 17x + 72$

14.

$(x - 10)(x - 11)$

> $x^2 - 21x + 110$

15.

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

> $x^2 - x - 6$

16.

$(x + 4)(x - 1)$

> $x^2 + 3x - 4$

17.

$(x + 5)(x - 2)$

> $x^2 + 3x - 10$

18.

$(x + 3)(x - 7)$

> $x^2 - 4x - 21$

19.

$(x + 6)(x - 4)$

> $x^2 + 2x - 24$

20.

$(x + 8)(x - 9)$

> $x^2 - x - 72$

21.

$(x + 10)(x - 11)$

> $x^2 - x - 110$

22.

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

> $x^2 + x - 6$

23.

$(x - 4)(x + 1)$

> $x^2 - 3x - 4$

24.

$(x - 5)(x + 2)$

> $x^2 - 3x - 10$

25.

$(x - 3)(x + 7)$

> $x^2 + 4x - 21$

26.

$(x - 6)(x + 4)$

> $x^2 - 2x - 24$

27.

$(x - 8)(x + 9)$

> $x^2 + x - 72$

28.

$(x - 10)(x + 11)$

> $x^2 + x - 110$

29.

$(x + 12)(x - 13)$

> $x^2 - x - 156$

30.

$(x - 14)(x + 15)$

> $x^2 + x - 210$

31.

$(x + 16)(x - 17)$

> $x^2 - x - 272$

32.

$(x - 18)(x + 19)$

> $x^2 + x - 342$

33.

$(x + 20)(x - 21)$

> $x^2 - x - 420$

34.

$(x - 22)(x + 23)$

> $x^2 + x - 506$

35.

$(x + 24)(x - 25)$

> $x^2 - x - 600$

MASTER QUESTIONS

M1.

A rectangular garden has length $(x + 5)$ metres and width $(x + 3)$ metres. Find the area in expanded form.

> $x^2 + 8x + 15$

M2.

The area of a square is $(x - 4)(x - 4)$. Expand this expression.

> $x^2 - 8x + 16$

M3.

A room's length is $(x + 7)$ metres and width is $(x - 2)$ metres. Calculate the area in expanded form.

> $x^2 + 5x - 14$

M4.

The product of two consecutive numbers can be written as $(x)(x + 1)$. Expand this binomial expression.

> $x^2 + x$

M5.

A picture frame has outer dimensions $(x + 10)$ cm by $(x + 8)$ cm. Find the area of the frame's outer surface in expanded form.

> $x^2 + 18x + 80$