Expand and simplify double brackets (co-efficient of $x > 1$)

Maths

Mrs Dennett

Expand and simplify double brackets (co-efficient of $x > 1$)

1. Use the grid to help you expand and simplify

$$(5x + 2)(x + 1)$$

×	x	+1
$5x$		
+2		

$(5x + 2)(x + 1) \equiv$ _____

2. Expand and simplify these expressions.

a) $(3a - 6)(a + 1)$

b) $(4h - 1)(2h - 3)$

c) $(3b - 5)(6 - 2b)$

d) $(4 + k)(6 - 4k)$

e) $(2 - 3h)(3h + 2)$

f) $(5y + 3)^2$

3. Find the area of this rectangle.

$(3 + 2x)$ [rectangle] $(5x + 2)$

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4. Expand and simplify

$(2a + 3b)^2$

5. Expand and simplify

$(3r + 2)(r^2 + 3r - 4)$

6. Martin and Frank are expanding and simplifying $(3j + 6)(3j - 5)$

Martin's working	Frank's working
$(3j + 6)(3j - 5)$	$(3j + 6)(3j - 5)$
$\equiv 6j^2 - 15j + 18j - 30$	$\equiv 9j^2 - 15j + 18j + 30$
$\equiv 6j^2 + 3j - 30$	$\equiv 9j^2 + 3j + 30$

They have each made a mistake.

Correct their errors.

Answers

Expand and simplify double brackets (co-efficient of $x > 1$)

1. Use the grid to help you expand and simplify:

$$(5x + 2)(x + 1)$$

×	x	+1
$5x$	$5x^2$	$+ 5x$
+2	$+ 2x$	+2

$(5x + 2)(x + 1) \equiv 5x^2 + 7x + 2$

2. Expand and simplify these expressions.

a) $(3a - 6)(a + 1)$ $3a^2 - 3a - 6$

b) $(4h - 1)(2h - 3)$ $8h^2 - 14h + 3$

c) $(3b - 5)(6 - 2b)$ $28b - 6b^2 - 30$

d) $(4 + k)(6 - 4k)$ $24 - 10k - 4k^2$

e) $(2 - 3h)(3h + 2)$ $4 - 9h^2$

f) $(5y + 3)^2$ $25y^2 + 30y + 9$

3. Find the area of this rectangle.

$(3 + 2x)$

$(5x + 2)$

$10x^2 + 19x + 6$

Expand and simplify double brackets (co-efficient of $x > 1$)

4. Expand and simplify $(2a + 3b)^2$

(2a + 3b) (2a + 3b)
$\equiv 4a^2 + 6ab + 6ab + 9b^2$
$\equiv 4a^2 + 12ab + 9b^2$

5. Expand and simplify:

$(2r + 2)(r^2 + 3r - 4)$

$\equiv 2r^3 + 6r^2 - 8r + 2r^2 + 6r - 8$
$\equiv 2r^3 + 8r^2 - 2r - 8$

6. Martin and Frank are expanding and simplifying $(3j + 6)(3j - 5)$

Martin's working	Frank's working
$(3j + 6)(3j - 5)$	$(3j + 6)(3j - 5)$
$\equiv 6j^2 + 15j + 18j - 30$	$\equiv 9j^2 - 15j + 18j + 30$
$\equiv 6j^2 + 3j - 30$	$\equiv 9j^2 + 3j + 30$

$9j^2$ -30

They have each made a mistake.

Correct their errors.