Expand 2 brackets and simplify expressions
e.g. where n≥1 $4(nx \pm 5) - 6(nx \pm 3)$

Maths

Mrs Dennett

Expand 2 brackets and simplify expressions

1. Use the grids to help you expand and simplify.

a) $3(x + 2)$

b) $-4(x - 3)$

×	x	+2
3		

×	x	-3
−4		

c) Use your answers to parts a) and b) to help you to simplify.

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

2. Expand and simplify these expressions.

a) $5(2x + 4) - 3(x - 1)$

b) $5(2x - 4) - 3(x + 1)$

c) $5(2x - 4) - 3(x - 1)$

What is the same and what is different about each of your answers?

3. Expand and simplify the expressions.

a) $4(1 - y) - (4 + y)$

b) $2(5g - 1) - 6(3 + 2g)$

Expand 2 brackets and simplify expressions

4. Spot the errors.

$$2(4g + 6) - (1 + 8g) \equiv 8g + 12 + 1 + 8g$$
$$\equiv 16g + 13$$

5. Expand and simplify the expressions.

a) $k(5 + k) - 7(2k - 1)$

b) $3(2p - 1) - p(p + 4)$

6. Substitute $n = 1, 2, 3, \ldots$ into this expression.

$$2(n+10) + 4(n-5) - 3(2n - 1)$$

What do you notice?

Can you explain why this happens?

7. Show that

$$\frac{1}{2}(2c + 8) - (5c + 4) + 4c \equiv 0$$

Answers

Expand 2 brackets and simplify expressions

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

a) $3(x + 2)$

b) $-4(x - 3)$

×	x	+2
3	$3x$	+ 6

×	x	-3
−4	-4x	+12

c) Use your answers to parts a) and b) to help you to simplify

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

$3x + 6 - 4x + 12 \equiv -x + 18 \equiv 18 - x$

2. Expand and simplify these expressions.

a) $5(2x + 4) - 3(x - 1)$ $10x + 20 - 3x + 3 \equiv 7x + 23$

b) $5(2x - 4) - 3(x + 1)$ $10x - 20 - 3x - 3 \equiv 7x - 23$

c) $5(2x - 4) - 3(x - 1)$ $10x - 20 - 3x + 3 \equiv 7x - 17$

What is the same/different?
Same $7x$ term but final number/sign differs

3. Expand and simplify the expressions.

a) $4(1 - y) - (4 + y)$ $4 - 4y - 4 - y \equiv -5y$

b) $2(8g - 1) - 6(3 + 2g)$
   $16g - 2 - 18 - 12g \equiv 4g - 20$

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Expand 2 brackets and simplify expressions

4. Spot the errors.

-1 – 8g

$2(4g + 6) - (1 + 8g) \equiv 8g + 12 + 1 + 8g$

$\equiv 16g + 13$

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5. Expand and simplify the expressions.

a) $k(5 + k) - 7(2k - 1)$ $5k + k^2 - 14k + 7$
$\equiv k^2 - 9k + 7$

b) $3(2p - 1) - p(p + 4)$ $6p - 3 - p^2 - 4p$
$\equiv -p^2 + 2p - 3$

6. Substitute n = 1, 2, 3, ... into this expression.

$2(n+10) + 4(n-5) - 3(2n - 1)$

What do you notice?   All result in 3

Can you explain why this happens?

All other terms cancel out

7. Show that $\frac{1}{2}(2c + 8) - (5c + 4) + 4c \equiv 0$

$\equiv c + 4 - 5c - 4 + 4c$

$\equiv \underline{c - 5c + 4c} \qquad \underline{+ 4 - 4}$

$\equiv 0$