

Q1

1

Multiply the terms inside the first bracket by 3 and the second bracket by -2

$$3 \times m + 3 \times 4 - 2 \times 4m - 2 \times 1$$

Simplify the terms (by multiplying their parts together)

$$3m + 12 - 8m - 2$$

first or second pair of terms correct [1]

Collect the m terms

$$3m - 8m = -5m$$

Collect the numbers

$$12 - 2 = 10$$

Write down the final answer

$$-5m + 10 [1]$$

Q2

2

Multiply the terms inside the first bracket by 5 and the second bracket by -2

$$5 \times p + 5 \times 3 - 2 \times 1 - 2 \times (-2p)$$

Simplify the terms (by multiplying their parts together and being careful with signs)

$$5p + 15 - 2 + 4p$$

first or second pair of terms correct [1]

Collect the p terms

$$5p + 4p = 9p$$

Collect the numbers

$$15 - 2 = 13$$

Write down the final answer

$$9p + 13 [1]$$

Q3

3

Multiply all terms in the first bracket by all terms in the second bracket

$$p \times p + p \times (-4) + 9 \times p + 9 \times (-4)$$

Simplify the terms (by multiplying their parts together)

$$p^2 - 4p + 9p - 36$$

3 out of 4 terms correct [!]

Collect the "like" p terms

$$-4p + 9p = 5p$$

Write out the final answer

$$p^2 + 5p - 36 [!]$$

Q4

4

Multiply all terms in the first bracket by all terms in the second bracket

$$x \times x + x \times 6 + 4 \times x + 4 \times 6$$

Simplify the terms (by multiplying their parts together)

$$x^2 + 4x + 6x + 24$$

3 out of 4 terms correct [!]

Collect the "like" x terms

$$4x + 6x = 10x$$

Write out the final answer

$$x^2 + 10x + 24 [!]$$

Q5

5

Multiply all terms in the first bracket by all terms in the second bracket

$$m \times m + m \times 10 + 3 \times m + 3 \times 10$$

Simplify the terms (by multiplying their parts together)

$$m^2 + 3m + 10m + 30$$

3 out of 4 terms correct [!]

Collect the "like" m terms

$$3m + 10m = 13m$$

Write out the final answer

$$m^2 + 13m + 30 [!]$$

Q6

6

Multiply all terms in the first bracket by all terms in the second bracket

$$x \times x + x \times 3 + (-5) \times x + (-5) \times 3$$

Simplify the terms (by multiplying their parts together)

$$x^2 + 3x - 5x - 15$$

3 out of 4 terms correct [!]

Collect the "like" x terms

$$3x - 5x = -2x$$

Write out the final answer

$$x^2 - 2x - 15 [!]$$

Q7

7

Multiply all terms in the first bracket by all terms in the second bracket

$$y \times y + y \times (-5) + (-2) \times y + (-2) \times (-5)$$

Simplify the terms (by multiplying their parts together)

$$y^2 - 5y - 2y + 10$$

3 out of 4 terms correct [!]

Collect the "like" y terms

$$-5y - 2y = -7y$$

Write out the final answer

$$y^2 - 7y + 10 [!]$$

Q8

8

Multiply all terms in the first bracket by all terms in the second bracket

$$y \times y + y \times 5 + 2 \times y + 2 \times 5$$

Simplify the terms (by multiplying their parts together)

$$y^2 + 5y + 2y + 10$$

3 out of 4 terms correct [!]

Collect the "like" y terms

$$5y + 2y = 7y$$

Write out the final answer

$$y^2 + 7y + 10 [!]$$

Q9

9

Multiply all terms in the first bracket by all terms in the second bracket

$$m \times m + m \times 3 + 7 \times m + 7 \times 3$$

Simplify the terms (by multiplying their parts together)

$$m^2 + 3m + 7m + 21$$

3 out of 4 terms correct [1]

Collect the "like" m terms

$$3m + 7m = 10m$$

Write out the final answer

$$m^2 + 10m + 21 [1]$$

Q10

10

Multiply all terms in the first bracket by all terms in the second bracket

$$2x \times x + 2x \times (-4) + 1 \times x + 1 \times (-4)$$

Simplify the terms (by multiplying their parts together)

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

3 out of 4 terms correct [1]

Collect the "like" x terms

$$-8x + x = -7x$$

Write out the final answer

$$2x^2 - 7x - 4 [1]$$

Q11

11

Multiply all terms in the first bracket by all terms in the second bracket

$$2x \times x + 2x \times (-8) + 3 \times x + 3 \times (-8)$$

Simplify the terms (by multiplying their parts together)

$$2x^2 - 16x + 3x - 24$$

3 out of 4 terms correct [1]

Collect the "like" x terms

$$-16x + 3x = -13x$$

Write out the final answer

$$2x^2 - 13x - 24 [1]$$

Q12

12

Multiply all terms in the first bracket by all terms in the second bracket

$$2t \times t + 2t \times 5 + (-3) \times t + (-3) \times 5$$

Simplify the terms (by multiplying their parts together)

$$2t^2 + 10t - 3t - 15$$

3 out of 4 terms correct [!]

Collect the "like" t terms

$$10t - 3t = 7t$$

Write out the final answer

$$2t^2 + 7t - 15 [!]$$

Q13

13

Write the squared bracket out as two brackets multiplied together

$$(w - 5)(w - 5)$$

Multiply all terms in the first bracket by all terms in the second bracket

$$w \times w + w \times (-5) + (-5) \times w + (-5) \times (-5)$$

Simplify the terms (by multiplying their parts together)

$$w^2 - 5w - 5w + 25$$

3 out of 4 terms correct [!]

Collect the "like" w terms

$$-5w - 5w = -10w$$

Write out the final answer

$$w^2 - 10w + 25 [!]$$

Q14-15

14

Two ways to expand two brackets are using FOIL and a grid.

Whichever method you use, the two terms in the first bracket each get multiplied by both terms in the second bracket.

	y	$+4$
2	$2y$	$+8$
$-y$	$-y^2$	$-4y$

3 terms correct [1]

Add together the terms inside the grid and collect like terms to simplify.

$$\begin{aligned}(y+4)(2-y) &= 2y + 8 - y^2 - 4y \\ &= 8 - 2y - y^2\end{aligned}$$

$$(y+4)(2-y) = 8 - 2y - y^2 [1]$$

15

Be careful, the "-" in the middle means this is two separate single brackets (rather than expanding two brackets).

"3x" will be multiplied by both terms in the first bracket.

"-x" will be multiplied by both terms in the second bracket.

$$\begin{aligned}3x(2x+3) - x(3x+5) &= 3x \times 2x + 3x \times 3 + (-x) \times 3x + (-x) \times 5 \\ &= 6x^2 + 9x - 3x^2 - 5x\end{aligned}$$

At least 3 correct terms [1]

Collect like terms to simplify the answer.

$$6x^2 + 9x - 3x^2 - 5x = 3x^2 + 4x$$

$$3x(2x+3) - x(3x+5) = 3x^2 + 4x [1]$$

Q16

16

Expand both sets of brackets by multiplying everything inside the first bracket by 4 and everything inside the second bracket by -1.

$$4 \times 2c + 4 \times 3 + (-1) \times 5c + (-1) \times (-1)$$

Simplify by completing the multiplications.

$$8c + 12 - 5c + 1$$

8c + 12 or -5c + 1 seen [1]

Simplify by collecting "like" terms.

$$3c + 13 [1]$$