Factorising expressions into a single bracket

Core

1: Fill in the gaps to factorise this expression.

$3x + 12 = 3(\_\_ + \_\_)$

2: Factorise $7y + 21$

3: Fully factorise $12x + 6$

4: What number should go in the gap to factorise this expression?

$6x + 14 = \_\_(3x + 7)$

5: Fully factorise $8p + 12$

Extension

1: Factorise $5w - 10$

2: Fully factorise $12x - 6$

3: Factorise $30x + 25$

4: Fully factorise $20p - 28$

5: What number should go in the gap to complete the equation below?

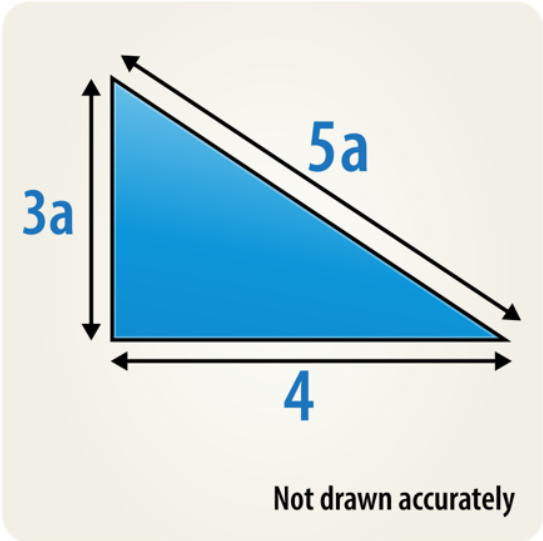
$15x + \_\_ = 3(5x + 6)$

6: Fully factorise $15c + 24d$

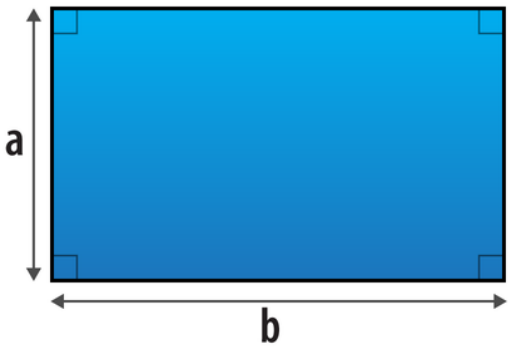
Challenge

1: Expand then fully factorise $12(n+3)+4(n-3)$

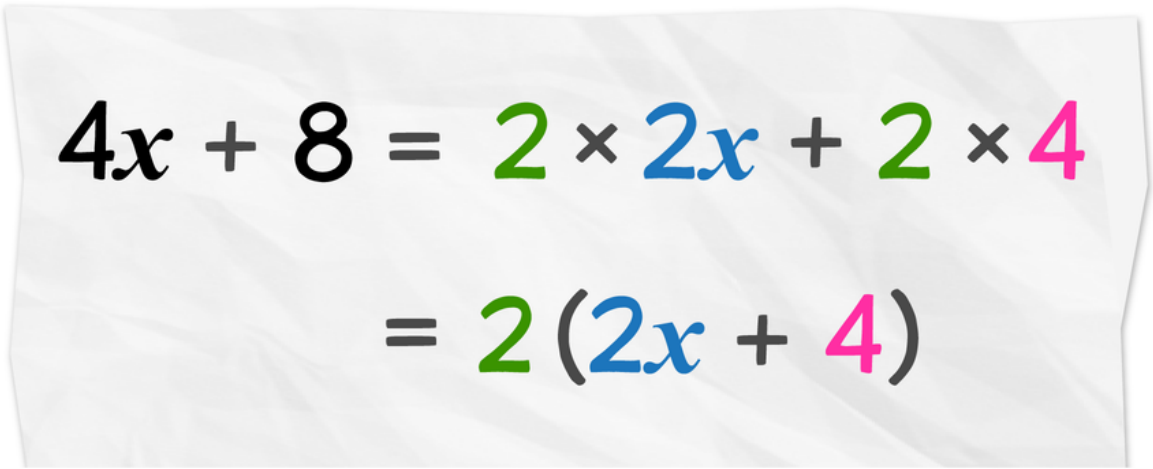
2: Find an expression for the perimeter of this triangle. Factorise your answer as far as possible.



3: Write an expression for the **perimeter** of this rectangle. Factorise your answer where possible.



4: Ewan was asked to factorise $4x + 8$ fully. His working is shown below.
a) Write a sentence explaining why Ewan was **not** given full marks for his answer.
b) What answer should Ewan have given to the question?



5: Florence thinks of a whole number, which she calls x.
She multiplies it by 4 then adds 14 to the result.
She calls this new number y.

a) Find an expression for Florence's new number, y.

b) Factorise the expression you found in part a).

c) Write a sentence to explain how you know from your answer to part b) that y is a multiple of 2.
