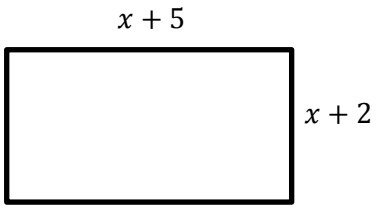
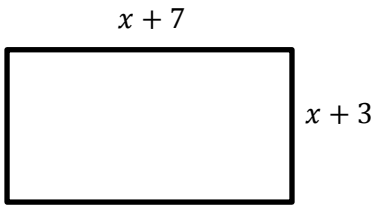
Learning Objective – to find algebraic expressions for area

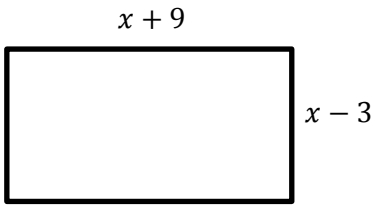
Review – expanding brackets

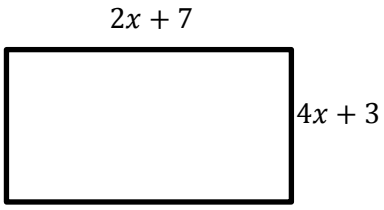
$(x+3)(x+2)$	$(x+5)(x+2)$	$(x+7)(x-2)$	$(x+4)^2$	$(x-4)(x-2)$
$(x+2)(x-7)$	$(x+1)(x+0.5)$	$(x-5)^2$	$(3x+2)(2x+1)$	$(5x+1)^2$

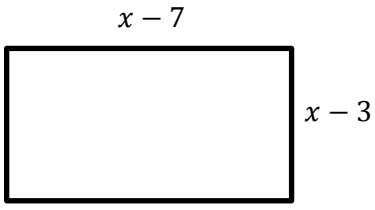
Find an expression for the area of the following shapes

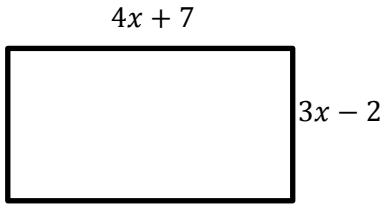


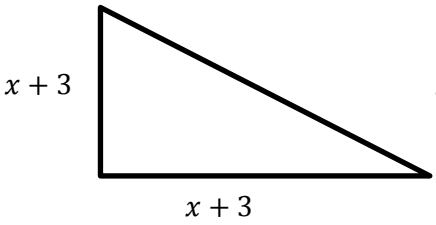


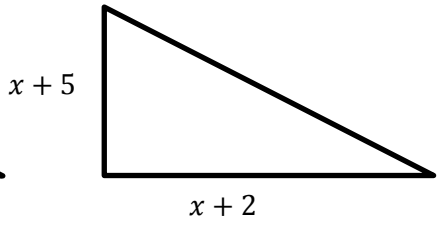


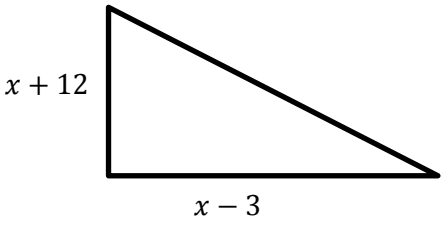


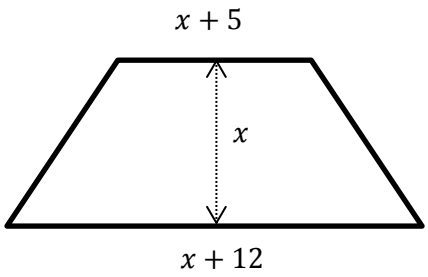


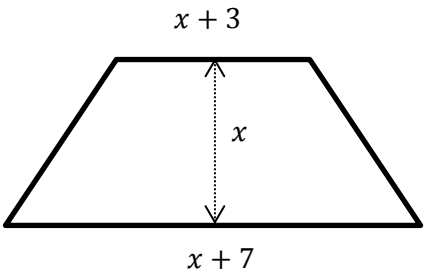


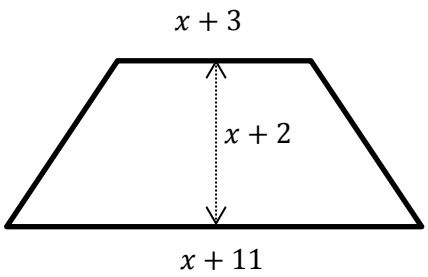


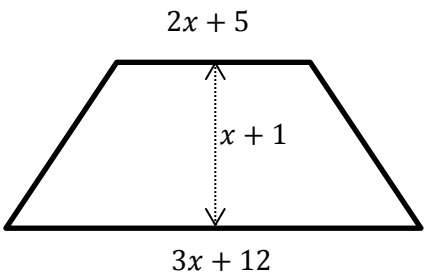












Learning Objective 1: to be able to use the QUADRATIC FORMULA

Learning Objective 2: to use the quadratic formula to solve AREA related problems

Use the QUADRATIC FORMULA to solve the following equations

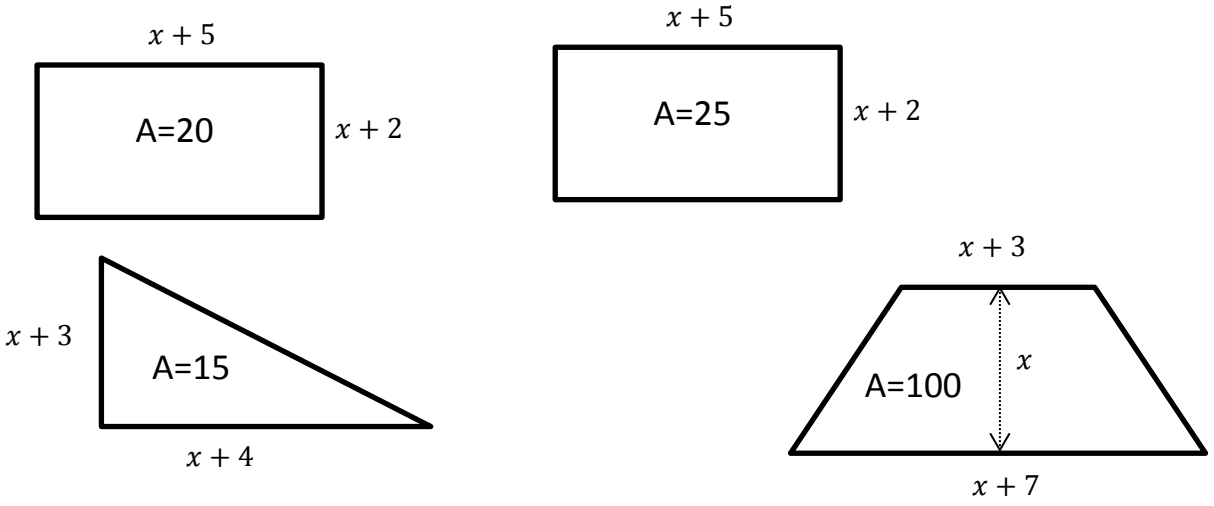
$x^2 + 5x + 1 = 0$	$x^2 + 10x + 2 = 0$	$x^2 + 3x - 5 = 0$
$3x^2 + 8x + 1 = 0$	$5x^2 - 3x - 2 = 0$	$3x^2 - x - 1 = 0$

EXTENSION: initial re-arrangement required

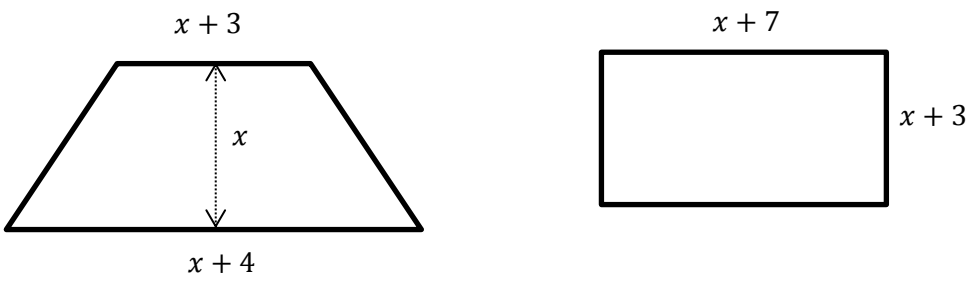
$3x^2 + 11x + 1 = 4x$	$5x^2 + 2x - 3 = 5x$
$4x^2 + 5x + 1 = 2x^2$	$\frac{1}{2}(x + 2)(x + 1) = 10$

NOW TRY AND SOLVE THESE SHAPE AND SPACE RELATED PROBLEMS

Find the value of x which gives the following shapes the required area



Is there are value of x which gives the following two shapes the same area?



Learning Objective 1: to be able to solve equations involving ALGEBRAIC FRACTIONS

Using the quadratic formula where possible, find solution the following equations involving algebraic fractions. Where solutions do not exist, write down NO SOLUTIONS EXIST.

$\frac{3}{x+2}+\frac{4}{x+1}=1$	$\frac{5}{x+2}+\frac{3}{x+1}=2$
$\frac{5}{x-2}+\frac{1}{x+5}=3$	$\frac{3}{x-3}-\frac{2}{x+6}=4$
$\frac{x}{x+2}+\frac{3}{2x+1}=1$	$\frac{4}{3x-2}-\frac{2}{3x-4}=3$