3.6 Polynomials of the Form $ax^2 + bx + c$

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* use the same strategies as for binomials
  ↳ the only difference is the coefficients of the variables are NOT 1

$(3d + 4)(4d + 2)$

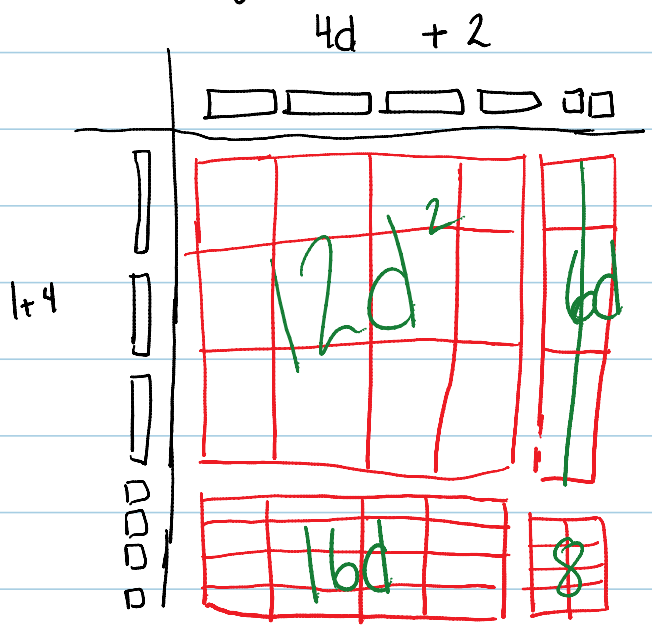
METHOD 1: Distributive Property (Expand and simplify)

$(3d + 4)(4d + 2)$

$= 12d^2 + 6d + 16d + 8$

$= \boxed{12d^2 + 22d + 8}$

METHOD 2: Algebra Tiles



1. draw a grid
2. write in dimensions
3. SOLVE

METHOD 3: Area Model

1. draw a rectangle
2. write in dimensions
3. divide into 4 smaller rectangles
4. calculate

	$3d$	$+4$
$4d$	$(4d)(3d) = 12d^2$	$(4d)(4) = 16d$
2	$(3d)(2) = 6d$	$(4)(2) = 8$

$= 12d^2 + 16d + 6d + 8$

$= 12d^2 + 22d + 8$

* Now, factor $ax^2 + bx + c \rightarrow (ax+b)(cx+d)$

Ex. #1

(a.) $4g^2 + 11g + 6$

$(\_x + \_)(\_x + \_)$

$= (1g + 2)(4g + 3)$

$= 4g^2 + 3g + 8g + 6$

$= 4g^2 + 11g + 6$