

TT 1 – 5 Possible Solutions

TT 1.

- a. The following shows the completed multiplication array.

	5x	2
3x	$15x^2$	$6x$
-5	$-25x$	-10

- b. $(5x + 2)(3x - 5)$
c. The like terms are $-25x$ and $6x$ and are located in cells 6 and 8, diagonally from each other.
d. $15x^2 - 19x - 10$
e. $(5x + 2)(3x - 5) = [5(2) + 2][3(2) - 5]$
 $= (10 + 2)(6 - 5)$
 $= (12)(1)$
 $= 12$
f. $15x^2 - 19x - 10 = 15(2)^2 - 19(2) - 10$
 $= 60 - 38 - 10$
 $= 12$

TT 2.

- a. The following shows the completed multiplication array.

	x^2	$-2x$	$+3$
x	x^3	$-2x^2$	$3x$
	x^2	$-2x$	3

- b. $(x^2 - 2x + 3)(x + 1)$
c. The like terms $-2x^2$ and x^2 are located in cells 7 and 10, diagonally from each other.
The like terms $3x$ and $-2x$ are located in cells 8 and 11, diagonally from each other.
d. $x^3 - 2x^2 + x^2 + 3x - 2x + 3 = x^3 - x^2 + x + 3$
e. Let $x = 3$.
 $(x^2 - 2x + 3)(x + 1) = [(3)^2 - 2(3) + 3](3 + 1)$
 $= (9 - 6 + 3)(4)$
 $= (6)(4)$
 $= 24$
f. Let $x = 3$.
 $x^3 - x^2 + x + 3 = (3)^3 - (3)^2 + 3 + 3$
 $= 27 - 9 + 3 + 3$
 $= 24$

TT 3. The like terms were always located in positions that were on a diagonal from each other.

TT 4. The answers were identical. This shows that the expressions for the product and the original factors are equal.

TT 5.

a. Answers may vary. The following is a sample.

			$3x$
		$7x$	

Be sure that the sum of the terms in the yellow area is $10x$.

Then choose appropriate values for the terms of the trinomial and binomial that result in those terms.

		x	3
x			$3x$
		$7x$	

Determine the products that can be determined at this point.

		x	3
x		x^2	$3x$
7		$7x$	21

Choose a value for the x^2 -term of the trinomial. Complete the table.

	$2x^2$	x	3
x	$2x^3$	x^2	$3x$
7	$14x^2$	$7x$	21

The question is as follows: Determine the product of $(2x^2 + x + 3)$ and $(x + 7)$.

b. The following shows a method that could be used to solve the question.

Use the table to find the individual products.

	$2x^2$	x	3
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x	$2x^3$	x^2	$3x$
7	$14x^2$	$7x$	21

Gather like terms.

$$2x^3 + x^2 + 14x^2 + 3x + 7x + 21 = 2x^3 + 15x^2 + 10x + 21$$