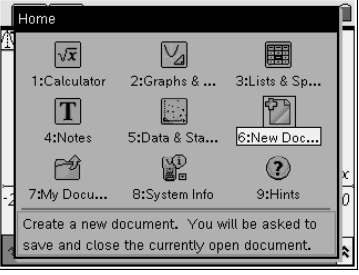



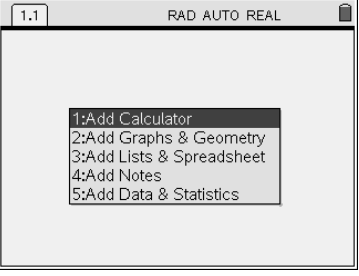
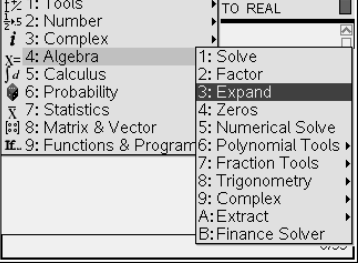



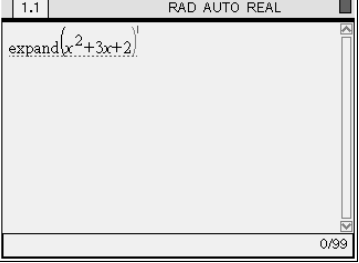

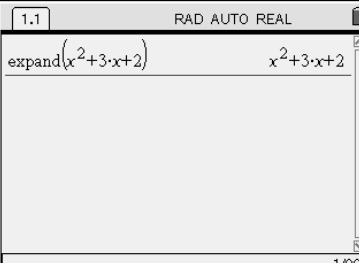
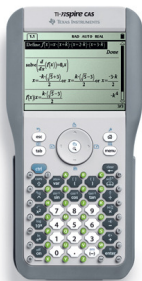


TI-Nspire Expanding Instruction Card

	<p>Turn the calculator on. </p> <p>Press   to open a new document</p>
	<p>Select 1: Add Calculator. (If you are asked if you wish to save a previous document, click on "No").</p>
	<p>Press    to access the Expand command</p>
	<p>Type in the expression you wish to expand between the brackets.</p> <p>Press .</p>
	<p>On the right side of the screen is the expanded form of the expression.</p>



Expanding

Worksheet: 1
Group: ___

Part 1:

Use your TI-Nspire to expand the following. Refer to your TI-Nspire instructional card on expanding.

(When you see the symbol \pm , circle either + or -.)

$$(x+2)(x+1) = x^2 \pm \square x \pm \bigcirc$$

$$(x+3)(x+5) = x^2 \pm \square x \pm \bigcirc$$

$$(x+4)(x+7) = x^2 \pm \square x \pm \bigcirc$$

$$(x+2)(x+3) = x^2 \pm \square x \pm \bigcirc$$

$$(x+5)(x+6) = x^2 \pm \square x \pm \bigcirc$$

$$(x+6)(x+3) = x^2 \pm \square x \pm \bigcirc$$

$$(x+7)(x+2) = x^2 \pm \square x \pm \bigcirc$$

Part 2:

What do you notice about the numbers in the \square 's compared to the numbers in the brackets?

What do you notice about the numbers in the \bigcirc 's compared to the numbers in the brackets?





Expanding

Worksheet: 1
Group: ___

Part 3: "Put your guess to the test!"

A) Put your TI-Nspire calculators away. Use what you noticed in part 2 to figure out what values should be in each box and circle.

$$(x+8)(x+4) = x^2 \pm \square x \pm \bigcirc$$

$$(x+7)(x+9) = x^2 \pm \square x \pm \bigcirc$$

$$(x+10)(x+5) = x^2 \pm \square x \pm \bigcirc$$

B) Now use your TI-Nspire calculators to check your answers above. If you were correct, go to C. If not go back to part 1 and 2 and try to notice something different to help you out.

C) Place integers of your choice in the blanks and fill in each box and circle to make the following equations true.

$$(x+\underline{\quad})(x+\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

$$(x+\underline{\quad})(x+\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

Extension: Use the TI-Nspire to expand this product. Then, fill in the box and circle to make the statement true.

$$(x+s)(x+t) = \underline{\hspace{2cm}} = x^2 \pm \square x \pm \bigcirc$$



Expanding

Worksheet: 2
Group: ___

Part 1:

Use your TI-Nspire to expand the following. Refer to your TI-Nspire instructional card on expanding.

(When you see the symbol \pm , circle either + or -.)

$$(x-2)(x-1) = x^2 \pm \square x \pm \bigcirc$$

$$(x-3)(x-5) = x^2 \pm \square x \pm \bigcirc$$

$$(x-4)(x-7) = x^2 \pm \square x \pm \bigcirc$$

$$(x-2)(x-3) = x^2 \pm \square x \pm \bigcirc$$

$$(x-5)(x-6) = x^2 \pm \square x \pm \bigcirc$$

$$(x-6)(x-3) = x^2 \pm \square x \pm \bigcirc$$

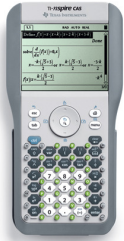
$$(x-7)(x-2) = x^2 \pm \square x \pm \bigcirc$$

Part 2:

What do you notice about the numbers in the \square 's compared to the numbers in the brackets?

What do you notice about the numbers in the \bigcirc 's compared to the numbers in the brackets?





Expanding

Worksheet: 2
Group: ___

Part 3: "Put your guess to the test!"

A) Put your TI-Nspire calculators away. Use what you noticed in part 2 to figure out what values should be in each box and circle.

$$(x-8)(x-4) = x^2 \pm \square x \pm \bigcirc$$

$$(x-7)(x-9) = x^2 \pm \square x \pm \bigcirc$$

$$(x-10)(x-5) = x^2 \pm \square x \pm \bigcirc$$

B) Now use your TI-Nspire calculators to check your answers above. If you were correct, go to C. If not go back to part 1 and 2 and try to notice something different to help you out.

C) Place integers of your choice in the blanks and fill in each box and circle to make the following equations true.

$$(x-\underline{\quad})(x-\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

$$(x-\underline{\quad})(x-\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

Extension: Use the TI-Nspire to expand this product. Then, fill in the box and circle to make the statement true.

$$(x-s)(x-t) = \underline{\hspace{2cm}} = x^2 \pm \square x \pm \bigcirc$$



Expanding

Worksheet: 3
Group: ___

Part 1:

Use your TI-Nspire to expand the following. Refer to your TI-Nspire instructional card on expanding.

(When you see the symbol \pm , circle either + or -.)

$$(x-2)(x+1) = x^2 \pm \square x \pm \bigcirc$$

$$(x+3)(x-5) = x^2 \pm \square x \pm \bigcirc$$

$$(x+4)(x-7) = x^2 \pm \square x \pm \bigcirc$$

$$(x-2)(x+3) = x^2 \pm \square x \pm \bigcirc$$

$$(x+5)(x-6) = x^2 \pm \square x \pm \bigcirc$$

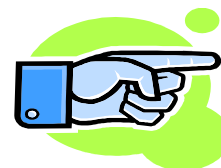
$$(x+6)(x-3) = x^2 \pm \square x \pm \bigcirc$$

$$(x-7)(x+2) = x^2 \pm \square x \pm \bigcirc$$

Part 2:

What do you notice about the numbers in the \square 's compared to the numbers in the brackets?

What do you notice about the numbers in the \bigcirc 's compared to the numbers in the brackets?





Expanding

Worksheet: 3
Group: ___

Part 3: "Put your guess to the test!"

A) Put your TI-Nspire calculators away. Use what you noticed in part 2 to figure out what values should be in each box and circle.

$$(x-8)(x+4) = x^2 \pm \square x \pm \bigcirc$$

$$(x+7)(x-9) = x^2 \pm \square x \pm \bigcirc$$

$$(x+10)(x-5) = x^2 \pm \square x \pm \bigcirc$$

B) Now use your TI-Nspire calculators to check your answers above. If you were correct, go to C. If not go back to part 1 and 2 and try to notice something different to help you out.

C) Place integers of your choice in the blanks and fill in each box and circle to make the following equations true.

$$(x+\underline{\quad})(x-\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

$$(x-\underline{\quad})(x+\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

Extension: Use the TI-Nspire to expand this product. Then, fill in the box and circle to make the statement true.

$$(x-s)(x+t) = \underline{\hspace{2cm}} = x^2 \pm \square x \pm \bigcirc$$



Expanding

Worksheet: 4

Group: ___

Part 1:

Use your TI-Nspire to expand the following. Refer to your TI-Nspire instructional card on expanding.

(When you see the symbol \pm , circle either + or -.)

$$(x+2)(x+2) = x^2 \pm \square x \pm \bigcirc$$

$$(x+3)(x+3) = x^2 \pm \square x \pm \bigcirc$$

$$(x-4)(x-4) = x^2 \pm \square x \pm \bigcirc$$

$$(x+7)(x+7) = x^2 \pm \square x \pm \bigcirc$$

$$(x+6)(x+6) = x^2 \pm \square x \pm \bigcirc$$

$$(x+5)(x+5) = x^2 \pm \square x \pm \bigcirc$$

$$(x-2)(x-2) = x^2 \pm \square x \pm \bigcirc$$

Part 2:

What do you notice about the numbers in the \square 's compared to the numbers in the brackets?

What do you notice about the numbers in the \bigcirc 's compared to the numbers in the brackets?





Expanding

Worksheet: 4
Group: ___

Part 3: "Put your guess to the test!"

A) Put your TI-Nspire calculators away. Use what you noticed in part 2 to figure out what values should be in each box and circle.

$$(x-3)(x-3) = x^2 \pm \square x \pm \bigcirc$$

$$(x-7)(x-7) = x^2 \pm \square x \pm \bigcirc$$

$$(x+10)(x+10) = x^2 \pm \square x \pm \bigcirc$$

B) Now use your TI-Nspire calculators to check your answers above. If you were correct, go to C. If not go back to part 1 and 2 and try to notice something different to help you out.

C) Place integers of your choice in the blanks and fill in each box and circle to make the following equations true.

$$(x+\underline{\quad})(x+\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

$$(x-\underline{\quad})(x-\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

Extension: Use the TI-Nspire to expand this product. Then, fill in the box and circle to make the statement true.

$$(x+s)(x+s) = \underline{\hspace{2cm}} = x^2 \pm \square x \pm \bigcirc$$



Expanding

Worksheet: 5

Group: ___

Part 1:

Use your TI-Nspire to expand the following. Refer to your TI-Nspire instructional card on expanding.

(When you see the symbol \pm , circle either + or -.)

$$(x-2)(x+2) = x^2 \pm \square x \pm \bigcirc$$

$$(x+3)(x-3) = x^2 \pm \square x \pm \bigcirc$$

$$(x+6)(x-6) = x^2 \pm \square x \pm \bigcirc$$

$$(x-8)(x+8) = x^2 \pm \square x \pm \bigcirc$$

$$(x+5)(x-5) = x^2 \pm \square x \pm \bigcirc$$

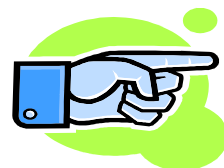
$$(x+1)(x-1) = x^2 \pm \square x \pm \bigcirc$$

$$(4x-3)(4x+3) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

Part 2:

What do you notice about the numbers in the \square 's compared to the numbers in the brackets?

What do you notice about the numbers in the \bigcirc 's compared to the numbers in the brackets?





Expanding

Worksheet: 5
Group: ___

Part 3: "Put your guess to the test!"

A) Put your TI-Nspire calculators away. Use what you noticed in part 2 to figure out what values should be in each blank, box and circle.

$$(x-4)(x+4) = x^2 \pm \square x \pm \bigcirc$$

$$(2x+7)(2x-7) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$(x+10)(x-10) = x^2 \pm \square x \pm \bigcirc$$

B) Now use your TI-Nspire calculators to check your answers above. If you were correct, go to C. If not go back to part 1 and 2 and try to notice something different to help you out.

C) Place integers of your choice in the blanks and fill in each box and circle to make the following equations true.

$$(x+\underline{\quad})(x-\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

$$(x-\underline{\quad})(x+\underline{\quad}) = x^2 \pm \square x \pm \bigcirc$$

Extension: Use the TI-Nspire to expand this product. Then, fill in the box and circle to make the statement true.

$$(x-s)(x+s) = \underline{\hspace{2cm}} = x^2 \pm \square x \pm \bigcirc$$



Expanding

Worksheet: 6
Group: ___

Part 1:

Use your TI-Nspire to expand the following. Refer to your TI-Nspire instructional card on expanding.

(When you see the symbol \pm , circle either + or -.)

$$2(x-2)(x-1) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$3(x-3)(x-5) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$4(x-4)(x-7) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$3(x-2)(x-3) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$2(x-5)(x-6) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$4(x-6)(x-3) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

$$3(x-7)(x-2) = \underline{\quad}x^2 \pm \square x \pm \bigcirc$$

Part 2:

What do you notice about the numbers in the \square 's compared to the numbers in the brackets?

What do you notice about the numbers in the \bigcirc 's compared to the numbers in the brackets?





Expanding

Worksheet: 6
Group: ___

Part 3: "Put your guess to the test!"

A) Put your TI-Nspire calculators away. Use what you noticed in part 2 to figure out what values should be in each blank, box and circle.

$$3(x-8)(x-4) = \underline{\quad}x^2 \pm \boxed{\quad} x \pm \bigcirc$$

$$2(x-7)(x-9) = \underline{\quad}x^2 \pm \boxed{\quad} x \pm \bigcirc$$

$$4(x-10)(x-5) = \underline{\quad}x^2 \pm \boxed{\quad} x \pm \bigcirc$$

B) Now use your TI-Nspire calculators to check your answers above. If you were correct, go to C. If not go back to part 1 and 2 and try to notice something different to help you out.

C) Place integers of your choice in the blanks and fill in each blank, box and circle to make the following equations true.

$$\underline{\quad}(x-\underline{\quad})(x-\underline{\quad}) = \underline{\quad}x^2 \pm \boxed{\quad} x \pm \bigcirc$$

$$\underline{\quad}(x-\underline{\quad})(x-\underline{\quad}) = \underline{\quad}x^2 \pm \boxed{\quad} x \pm \bigcirc$$

Extension: Use the TI-Nspire to expand this product. Then, fill in the blank, box and circle to make the statement true.

$$a(x-s)(x-t) = \underline{\hspace{2cm}} = \underline{\quad}x^2 \pm \boxed{\quad} x \pm \bigcirc$$

EXPANDING USING CAS: SUMMARY SHEET

Choose **three** examples from each presentation and record them in the space provided.

Worksheet 1: (+,+)	Worksheet 2: (-,-)	Worksheet 3: (+,-)
• • •	• • •	• • •
Rule:		
Worksheet 4: Perfect Square	Worksheet 5: Diff of Squares	Worksheet 6: Multiple Steps
• • •	• • •	• • •
Shortcut:	Shortcut:	Shortcut: