

Warm-up

Get your homework out from yesterday.
Start on your warm-up.



1. Determine the following for the expression below:

$$3x^2 - 45x + 47$$

- Terms? $3x^2$, $-45x$, 47
- Coefficients? 3 , -45
- Constants? 47

2. Rewrite the following expression in descending order:

$$-2x + x^2 \rightarrow x^2 - 2x$$

- Is the following expression a quadratic expression? Why?

yes, highest power is 2

Agenda:

1) "Interpretations of Expressions" -
Guided Notes

2) Independent Practice.

3) Exit Ticket.



Example 1:

Show that $(x+2)(2x-1)$ is a quadratic expression by writing it in the form ax^2+bx+c . Identify a , b , and c .

Step 1. Simplify:

$$\begin{aligned}(x+2)(2x-1) \\ 2x^2 - x + 4x - 2 \\ 2x^2 + 3x - 2\end{aligned}$$

Step 3. Identify:

$$\begin{aligned}a &= 2 \\ b &= 3 \\ c &= -2\end{aligned}$$

Step 2. Compare and determine:

quadratic in
 ax^2+bx+c form.

Example 2:

What values of x make the expression $(x+2)(x-3)$ positive?

$x < -2$ 1 2 $x > 3$

$(x+2)$ $(x-3)$



+ +
- -



Stop and Think: What will make the expression positive? Will one of the factors being negative make the expression positive? How about both?

$$-2 < x < 3$$

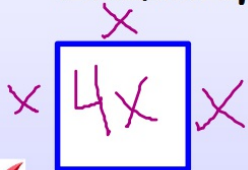


$$x < -2$$
$$x > 3$$

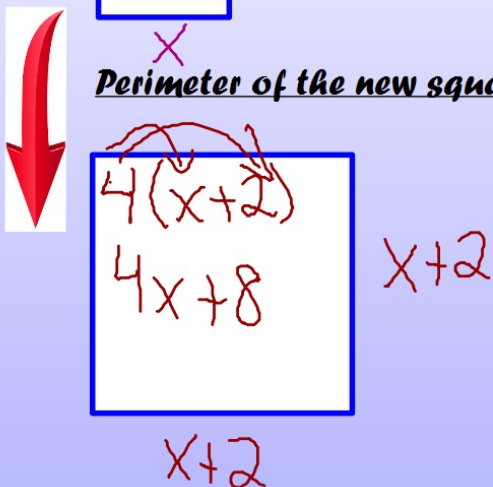
Example 3:

The length of each side of a square is increased by 2 centimeters. How does the perimeter change? How does the area change?

Perimeter of the original square:

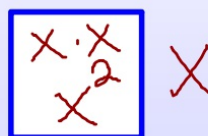


Perimeter of the new square:

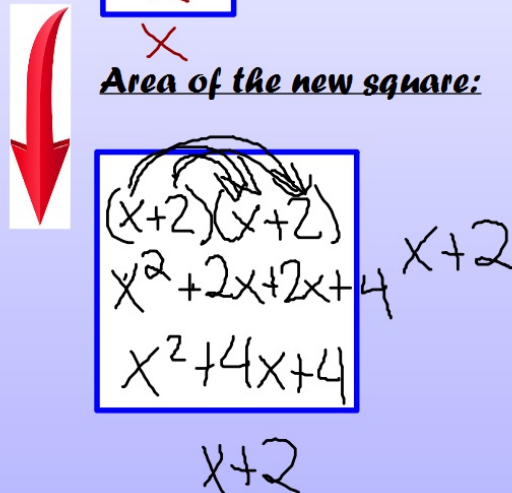


$l \times w$

Area of the original square:



Area of the new square:



Teacher's Turn! ☺	Your Turn! ☺
Rewriting in descending order: $3x^2y^4 - 2x^5y^3 + 8x - 4y + 6x^3y^5$ $-2x^5y^3 + 6x^3y^5 + 3x^2y^4 + 8x - 4y$	Rewrite in descending order: $2x^2 + 3x^4 + 6x + 34$ $3x^4 + 2x^2 + 6x + 34$
Combining Like Terms: $(9x^4 - 13x^2) - (-14x^4 + 10x^2 + 14x^3)$ $9x^4 - 13x^2 + 14x^4 - 10x^2 - 14x^3$ $23x^4 - 14x^3 - 23x^2$	Combining Like Terms: #1. $(2x^2 + 6x + 5) + (3x^2 - 2x - 1)$ $5x^2 + 4x + 4$ #2. $2x^2 + 5 - 6x - 3 + 9x$ $2x^2 + 3x + 2$
Distributive Property: Example 4: $(x+3)(2x-5)$	Distributive Property: Example 5: $(x+3)(x-4)(x+5)$

$$2x^2 - 5x + 6x - 15$$

$$2x^2 + x - 15$$

$$x^2 + 3x - 4x - 12(x+5)$$

$$(x^2 - x - 12)x(x+5)$$

$$(x^3 + 5x^2 - x^2 - 5x - 12x - 60)$$

$$[x^3 + 4x^2 - 17x - 60]$$

Independent Practice:

1. Solutions are available at the front of the classroom.

2. Keep this as your Notes.

3. Ask yourself, ask around, then ask the teacher.

Expectations:

- You may work with a partner.
- Music volume > Talking volume.
- 30 minutes.

EXIT TICKET

Exit Ticket: (You may use your notes)

1. What values of x make the expression $(x+7)(x-10)$ negative?

2. Show that the expression is a quadratic expression by writing it in the form ax^2+bx+c . Identify a , b , and c .

$(3x+5)(4x-1)$

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