Mu Alpha Theta meeting after school today — until 4:15 pm.

Special guest: Kyle Walker, Senior @ TU. He is:

- editor of school paper
- double major physics/philosophy
- tall
- just back from semester in Vienna, Austria
- COOL!

1. $y = x^2 + 3$ left ____ right ____ up 3 down ____ flip? (Y/N) N
2. $y = x^2 - 3$ left ____ right ____ up ____ down 3 flip? (Y/N) N
3. $y = -x^2 + 3$ left ____ right ____ up 3 down ____ flip? (Y/N) Y
4. $y = -x^2 - 3$ left ____ right ____ up ____ down 3 flip? (Y/N) Y
5. $y = (x-2)^2 + 3$ left ____ right 2 up 3 down ____ flip? (Y/N) N
6. $y = (x+3)^2 - 3$ left 3 right ____ up ____ down 3 flip? (Y/N) N
7. $y = -(x-5)^2 + 1$ left ____ right 5 up 1 down ____ flip? (Y/N) Y
8. $y = -(x+6)^2 - 4$ left 6 right ____ up ____ down 4 flip? (Y/N) Y
9. $y = (x-4)^2 + 6$ left ____ right 4 up 6 down ____ flip? (Y/N) N

10. So: what do you expect when you see $(x-m)^2$ in the expression? how about $(x+m)^2$?

↑some number ↗

$(x-m)^2$ right m units

$(x+m)^2$ left m units

11. And: what do you expect when you see $+n$ at the end? how about $-n$?

↑some number

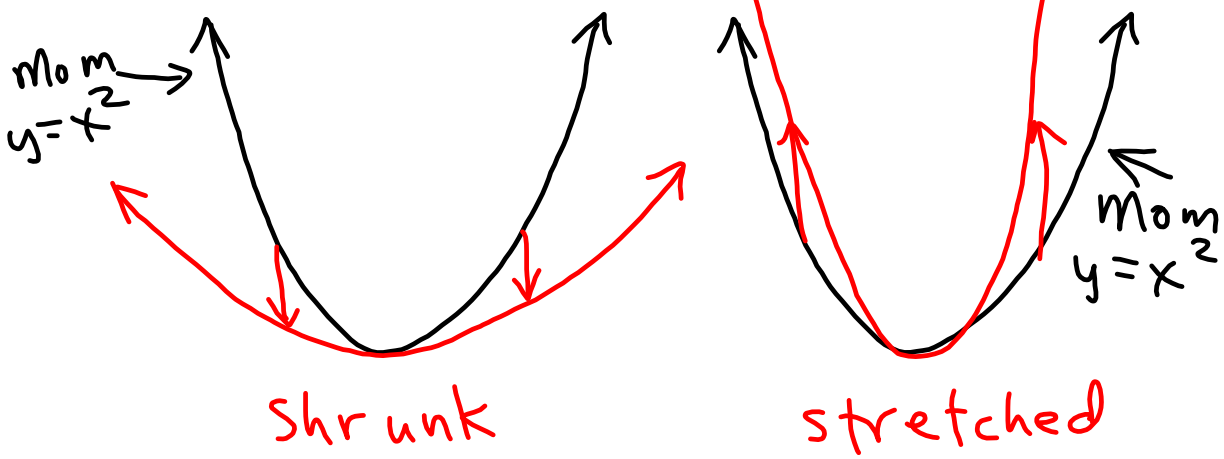
$+n$ up n units

$-n$ down n units

12. Finally: where do you put the minus sign in order to "flip" the graph?

in front of the x^2 term

topic: (vertical) Stretching and shrinking graphs of parabolas.



hw for Mon. Does the graph stretch or shrink Mom ($y=x^2$)?

In the end, what pattern do you see? Is there a "cutoff" — some # exists such that > one thing
< another thing

$y = \pm m x^2$, m_0

↑ is there a value of m such that:

$m > m_0$ stretch (shrink)?

$m < m_0$ shrink (stretch)

1. $y = 5x^2$ stretch___ shrink___
2. $y = 2x^2$ stretch___ shrink___
3. $y = 1.5x^2$ stretch___ shrink___
4. $y = 0.8x^2$ stretch___ shrink___
5. $y = 0.2x^2$ stretch___ shrink___
6. $y = -5x^2$ stretch___ shrink___

What is the switch-point between stretch and shrink $y = \pm 9x^2$
↑