

step pattern

The general form of a "shifted" quadratic is:

$y = a(x - h)^2 + k$ with handwritten annotations: 'a' circled in red, 'x-h' circled in green, and '+k' circled in purple. A red arrow points from the text 'step pattern' to the equation. A green arrow points from the text 'h.s. changes signs' to the minus sign in the equation.

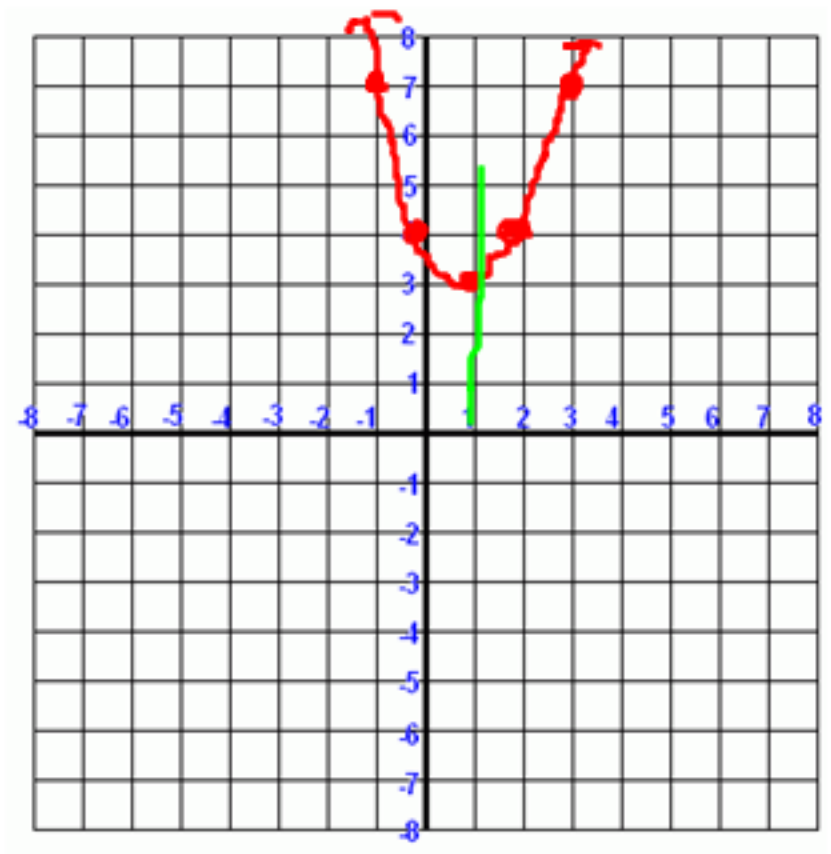
h.s. changes signs

This form is called vertex form. When graphing **remember that the "h" value is the opposite sign.

(h, k)

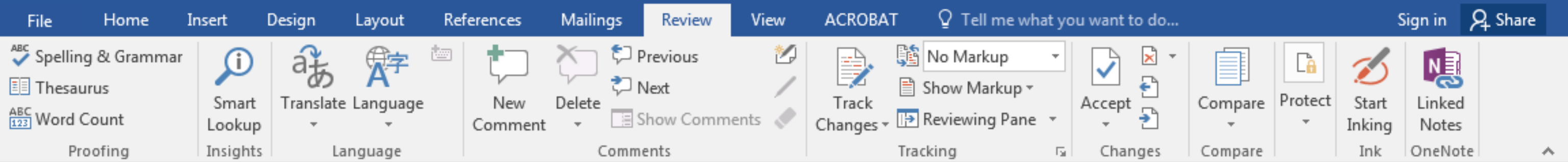
Describe the translations for $y = (x - 1)^2 + 3$. State the vertex. Then make a sketch of the relation.

- H.S.- right 1
- V.S.- up 3
- Max/Min- min
- Stretch/Shrink- none
- AoS- $x = 1$
- Opening- opening up
- Vertex- (1, 3)



Describe the translations for $y = (x + 2)^2 - 4$. State the vertex. Then make a sketch of the relation.





Describe the translations for $y = (x+2)^2 - 4$. State the vertex. Then make a sketch of the relation.

vertex $\rightarrow (-2, -4)$

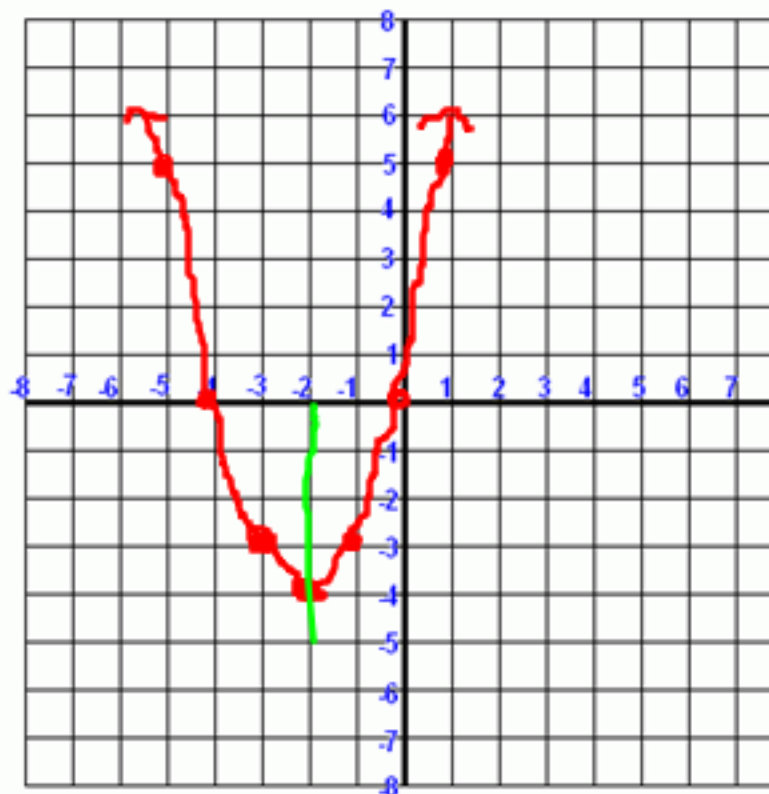
h.s. \rightarrow left 2

v.s. \rightarrow down 4

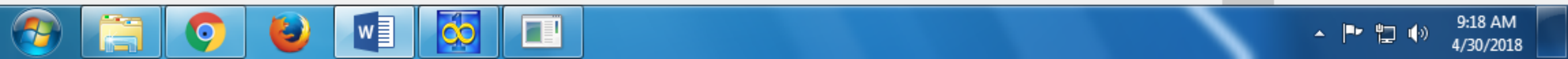
a.o.s. $\rightarrow x = -2$

opens up

min



Course: Grade 10 Mathematics



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- Combining like terms
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- Correlation
- Custom question
- Discriminant

2.77 pages - + 📄
 12 questions

Current question sets (1):

12 × Graphing Quadratic Functions

Math10P Assignment

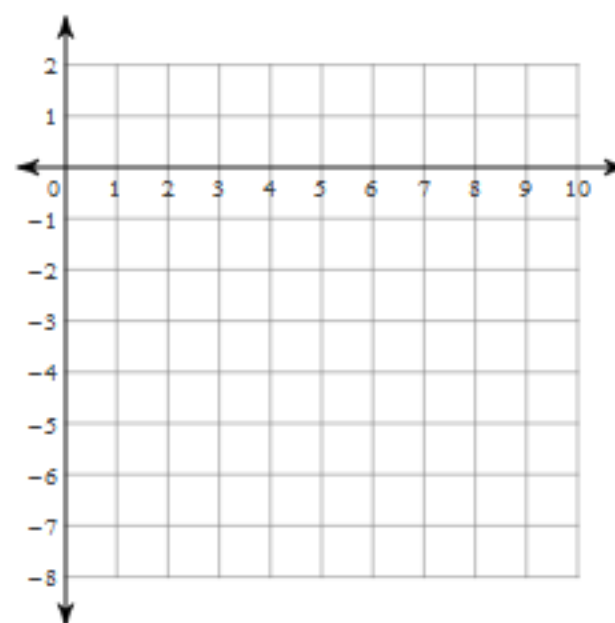
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Graphing Quadratic Functions in Vertex Form

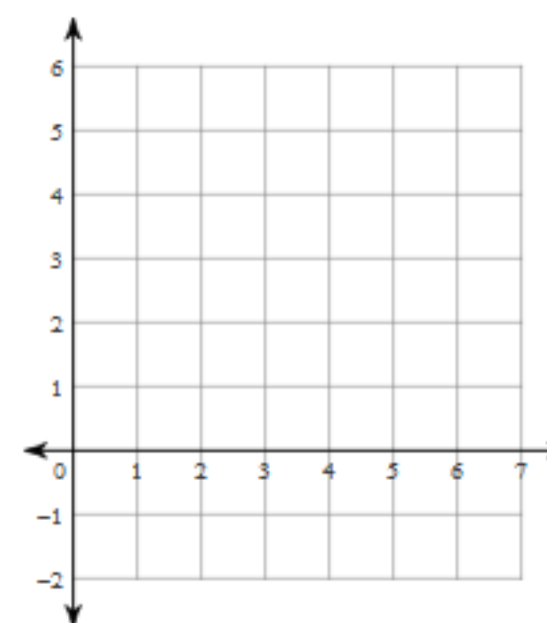
Date _____

Sketch the graph of each function. State the horizontal and vertical shifts, max/min, stretch/shrink, axis of symmetry, direction of opening, and the vertex

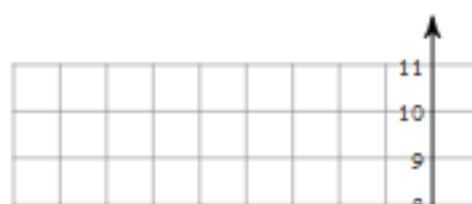
1) $y = -2(x - 3)^2 + 1$



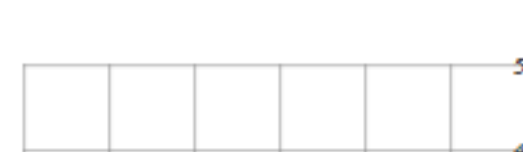
2) $y = \frac{1}{2}(x - 4)^2 + 1$

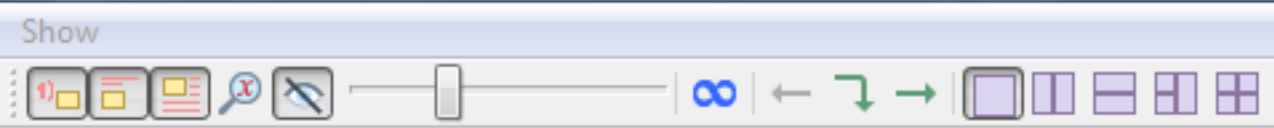


3) $y = 2(x + 3)^2 + 2$



4) $y = -\frac{1}{2}(x + 2)^2 + 3$





Sketch the graph of each function. State the horizontal and vertical shifts, max/min, stretch/shrink, axis of symmetry, direction of opening, and the vertex

1) $y = -2(x - 3)^2 + 1$

vertex $\rightarrow (3, 1)$

h.s \rightarrow right 3

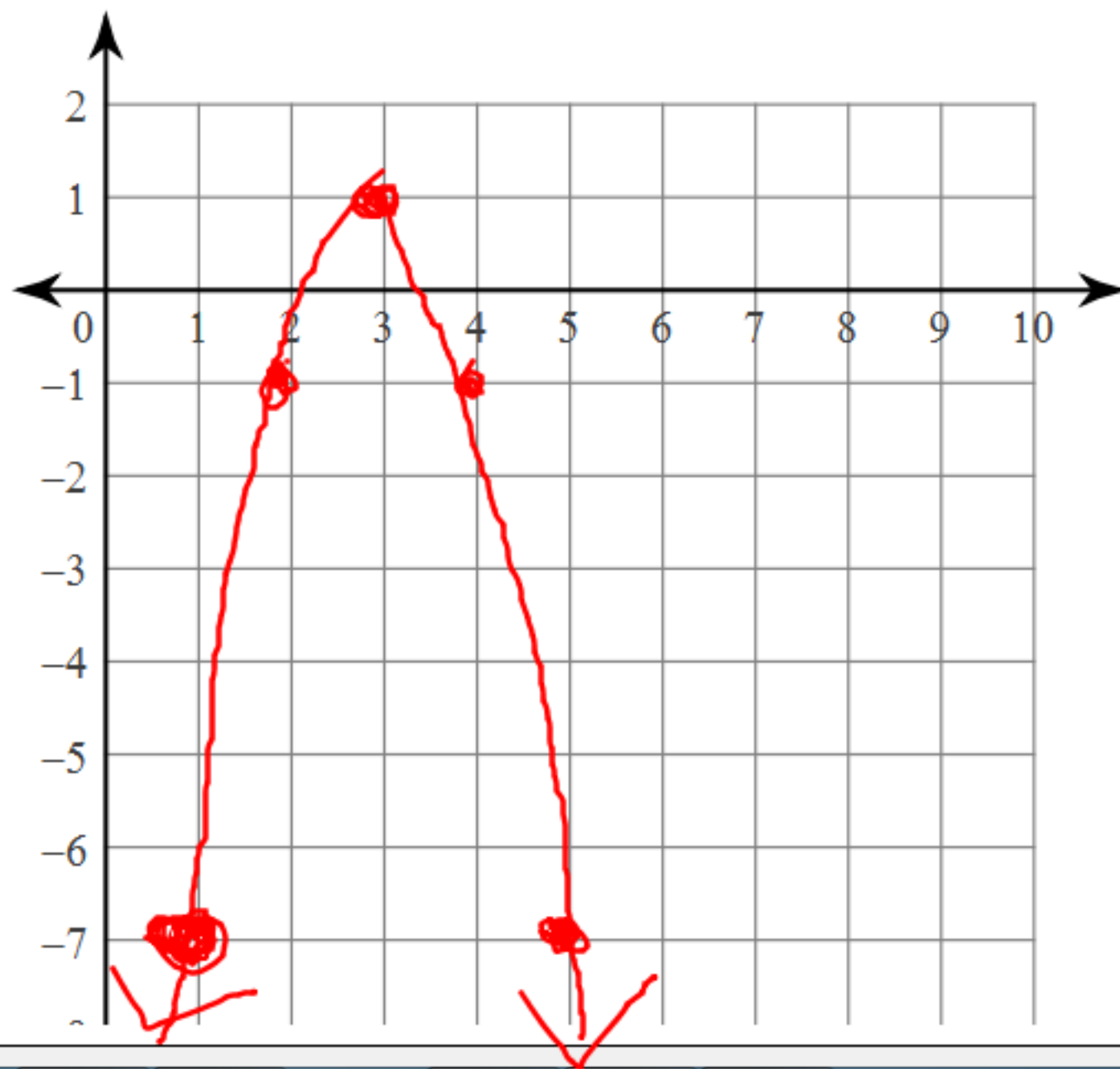
v.s \rightarrow up 1

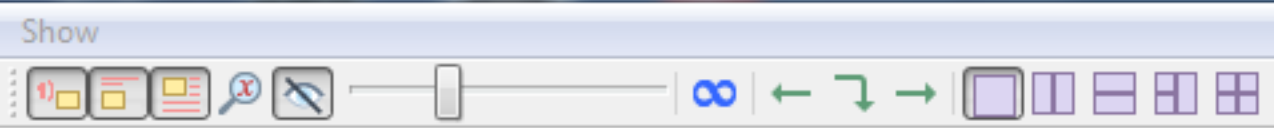
a.o.s $\rightarrow x = 3$

max

shrink by 2

opens down





Sketch the graph of each function. State the horizontal and vertical shifts, max/min, stretch/shrink, axis of symmetry, direction of opening, and the vertex

vertex (4, 1)

2) $y = \frac{1}{2}(x - 4)^2 + 1$

over 1, up $1 \times 0.5 = 0.5$
over 1, up $3 \times 0.5 = 1.5$
over 7, up $5 \times 0.5 = 2.5$

stretch by $\frac{1}{a}$

