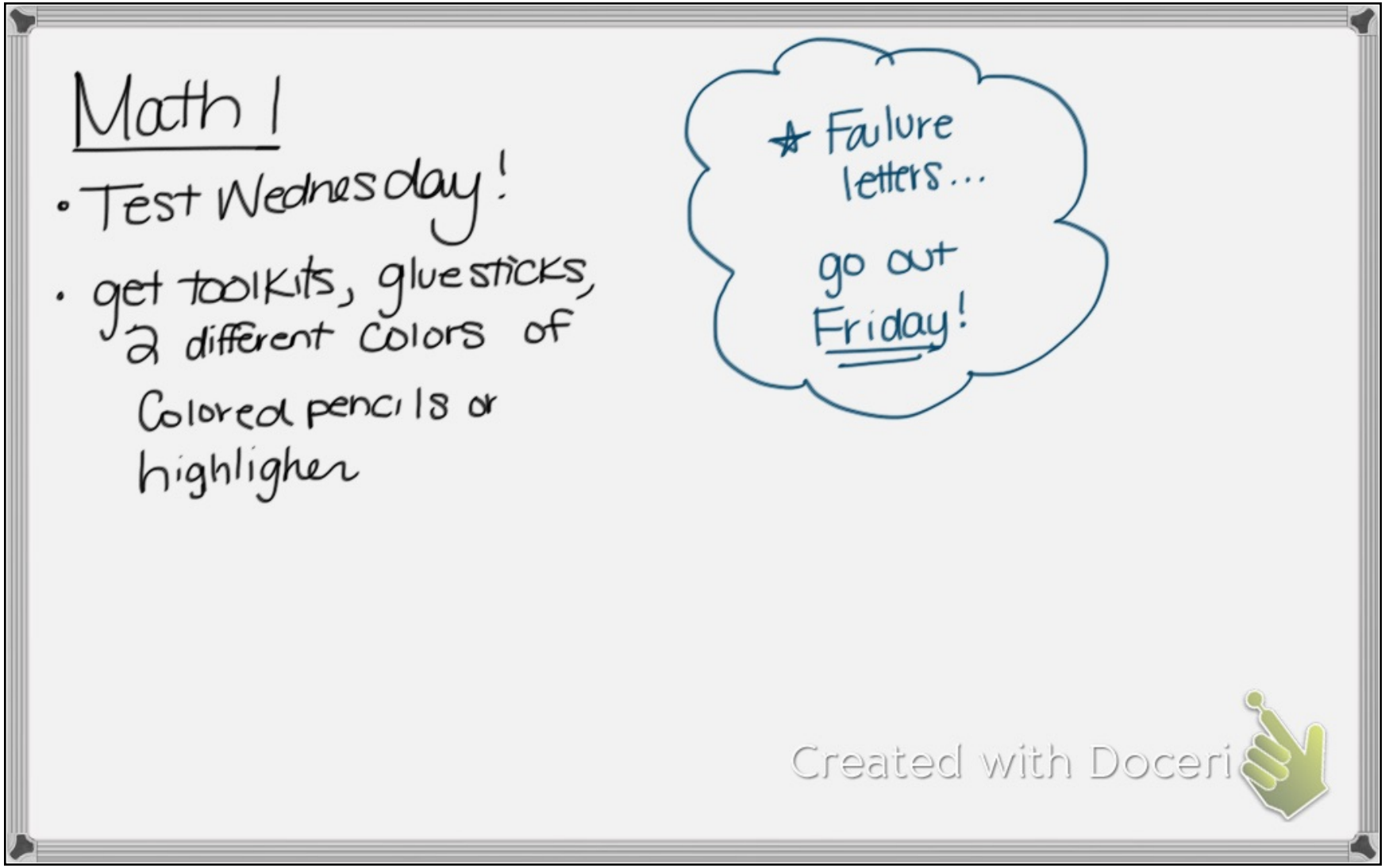
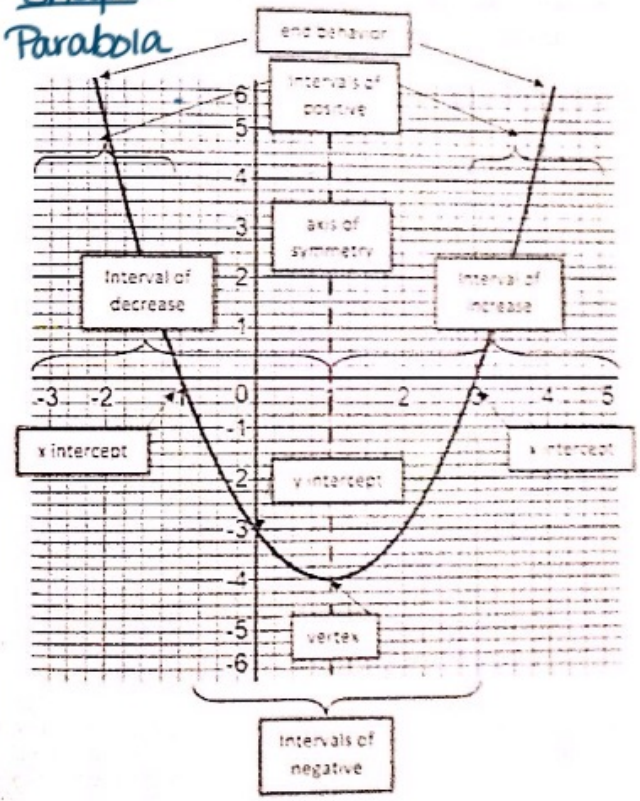

Math 1
• Test Wednesday!
• get toolkits, gluesticks, 2 different colors of Colored pencils or highlighter
★ Failure letters... go out Friday!
Created with Doceri

KEY FEATURES OF QUADRATICS

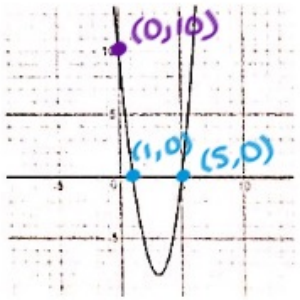
Shape:
Parabola

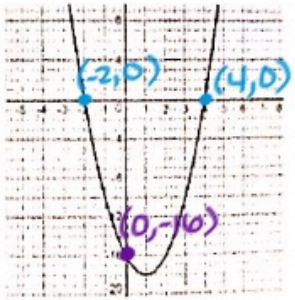


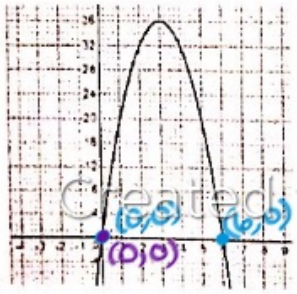
INTERCEPTS

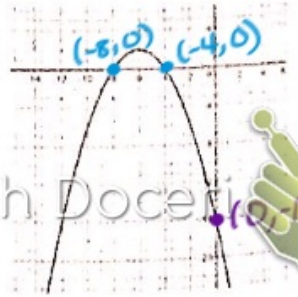
- The y intercept is the y value when x = 0 and there is only one.
- An x intercept is an x value when y = 0 and a parabola can have at most two.

Label the intercepts on each of the graphs.





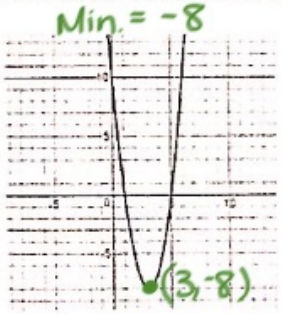


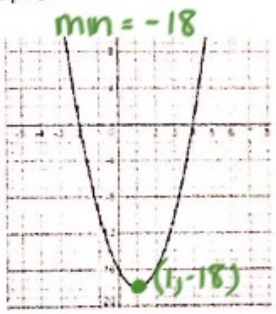


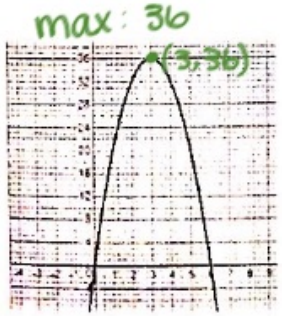
MAX OR MIN

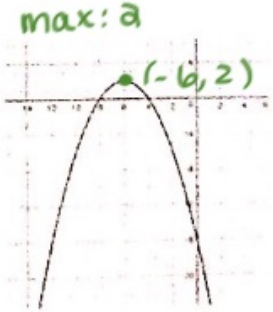
- The maximum value is the largest y value and occurs when the parabola opens down.
- The minimum value is the smallest y value and occurs when the parabola opens up.
- The max or min value is the y value of the vertex.

Identify if the parabola has a maximum or minimum and label the vertex on each of the graphs.





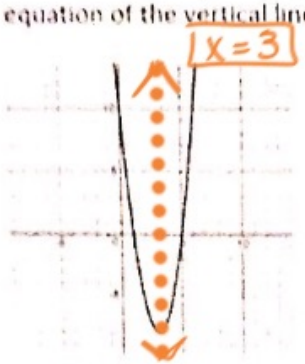


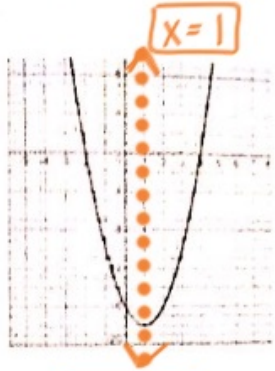


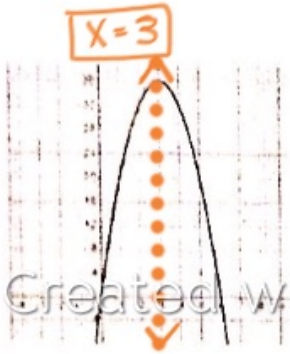
AXIS OF SYMMETRY

- The axis of symmetry is the vertical line of reflection and can be written in the form x = #
- The axis of symmetry is the x value of the vertex.

Draw the line of symmetry for each parabola and write the equation of the vertical line.



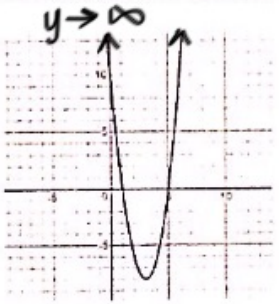


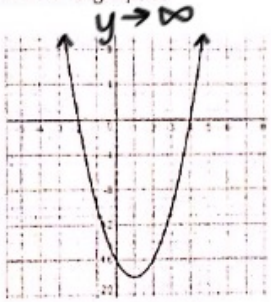


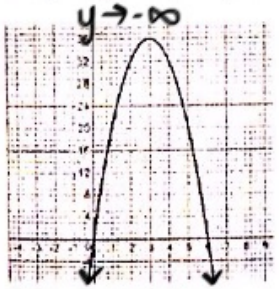
END BEHAVIOR

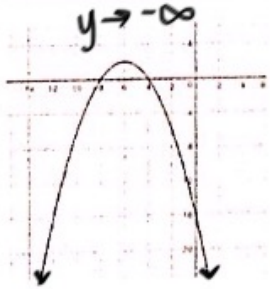
- The end behavior describes what happens to the y values as:
  - x goes towards negative infinity ($x \to -\infty$)
  - x goes towards positive infinity ($x \to \infty$)
- If the parabola opens up, the y values are going towards infinity ($y \to \infty$)
- If the parabola opens down, the y values are going towards negative infinity ($y \to -\infty$)

Describe the end behavior for each of the graphs.





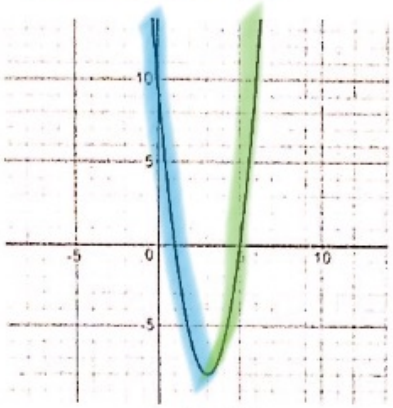




4

INTERVALS OF INCR

- The interval of increase describes the x values for when the y values are going up.

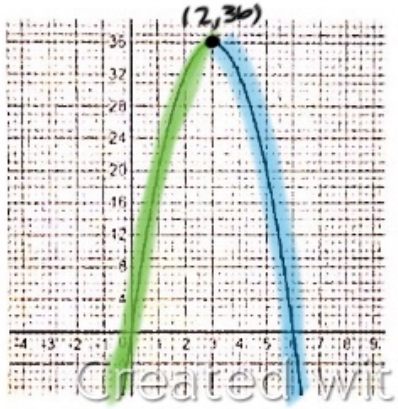


Interval of Increase

$x > 3$

Interval of Decrease

$x < 3$



Interval of Increase

$x < 2$

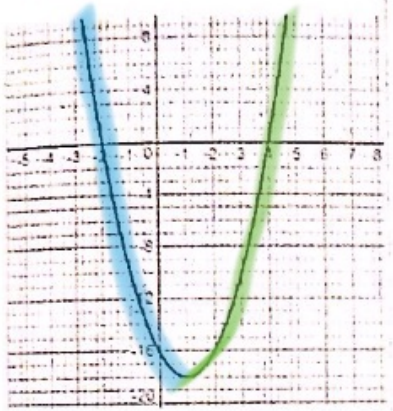
Interval of Decrease

$x > 2$

5

EASE OR DECREASE

- The interval of decrease describes the x values when the y values are going down.

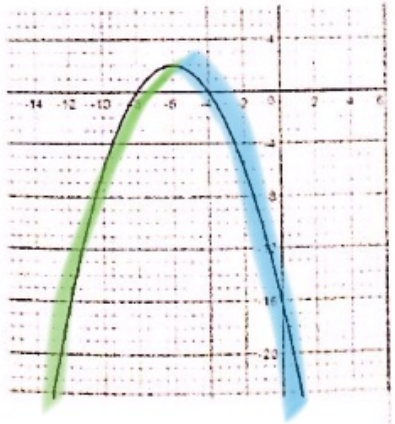


Interval of Increase

$x > 1$

Interval of Decrease

$x < 1$



Interval of Increase

$x < -6$

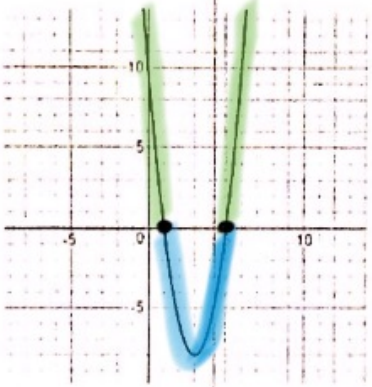
Interval of Decrease

$x > -6$

6

INTERVALS OF POS

- The interval of positive describes the x values for when the y values are positive.



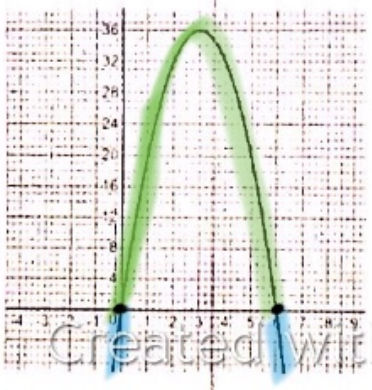
Intervals of Positive

$x > 5$

$x < 1$

Interval of Negative

$1 < x < 5$



Interval of Positive

$0 < x < 6$

Intervals of Negative

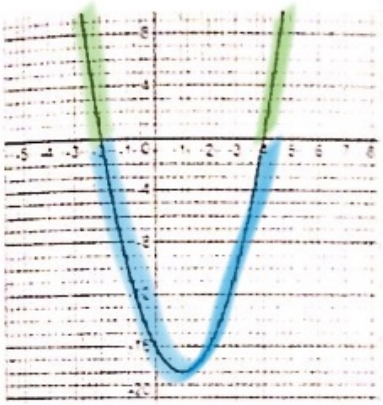
$x < 0$

$x > 6$

7

ITIVE OR NEGATIVE

- The interval of negative describes the x values when the y values are negative



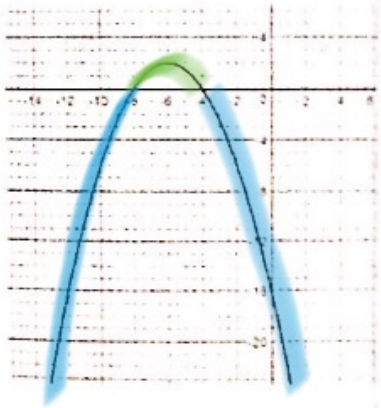
Intervals of Positive

$x < -3$

$x > 4$

Interval of Negative

$-3 < x < 4$



Interval of Positive

$-8 < x < -4$

Intervals of Negative

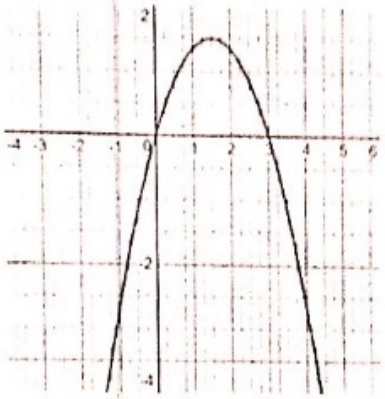
$x < -8$

$x > -4$

8

PUTTING IT ALL TOGETHER

For the parabola graphed below, identify and label all the key features listed.

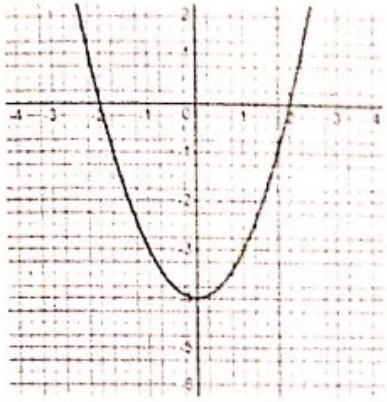


- x intercepts (,) and (,)
- y intercept (,)
- vertex (,)
- maximum value y = _____
- axis of symmetry x = _____
- interval of increase
- interval of decrease
- interval of positive
- intervals of negative
- end behavior
  - as x → ∞ then y → ___
  - as x → -∞ then y → ___

9

PUTTING IT ALL TOGETHER

For the parabola graphed below, identify and label all the key features listed.



- x intercepts (,) and (,)
- y intercept (,)
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- interval of increase
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- interval of positive
- intervals of negative
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  - as x → ∞ then y → _____
  - as x → -∞ then y → _____