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

Volunteer
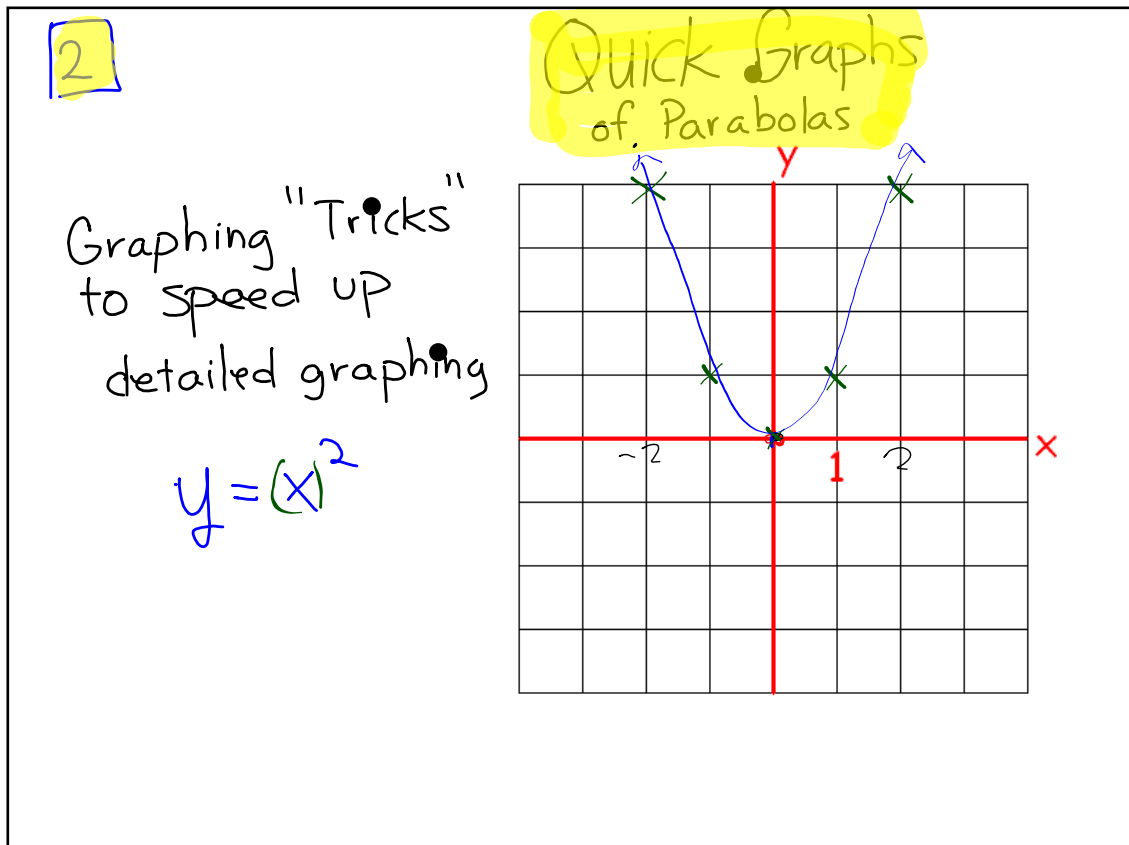
to sketch
without a
GDC.

(1, -2)

Let me know if you have
questions from

② - 23 to 29

Do question
#1 on the
Warm Up

only!

1 Sketch $y = \frac{1}{3}(x+7)^2 + 2$

without GDC

$y = (x)^2$

$y = (x+7)^2$

2

Graphing "Tricks" to speed up detailed graphing

$y = (x)^2$

Quick Graphs of Parabolas

y

~2   1   2   x

3

$$y = 2x^2 \bullet$$

$$y = \frac{-1}{2}x^2$$

4

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

5

Predict the vertex of

$$y = -(x+6)^2 + 5$$

$(-6, 5)$
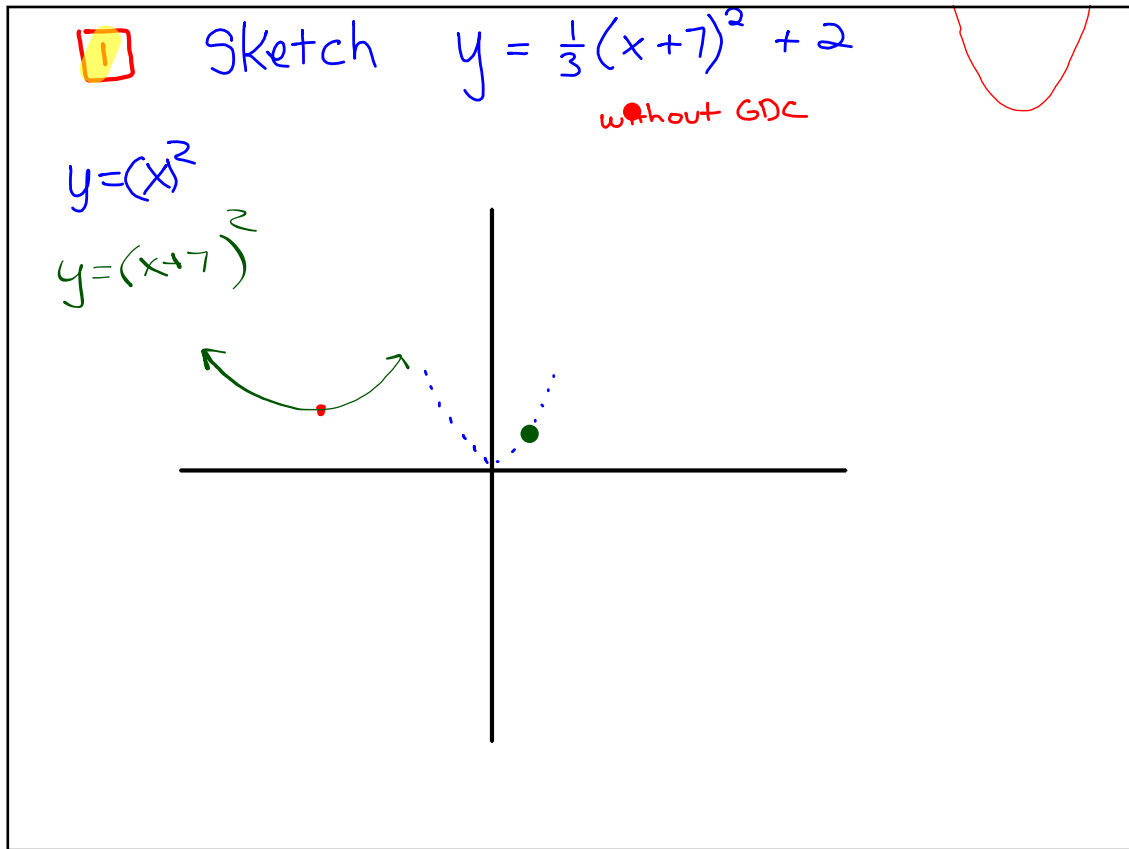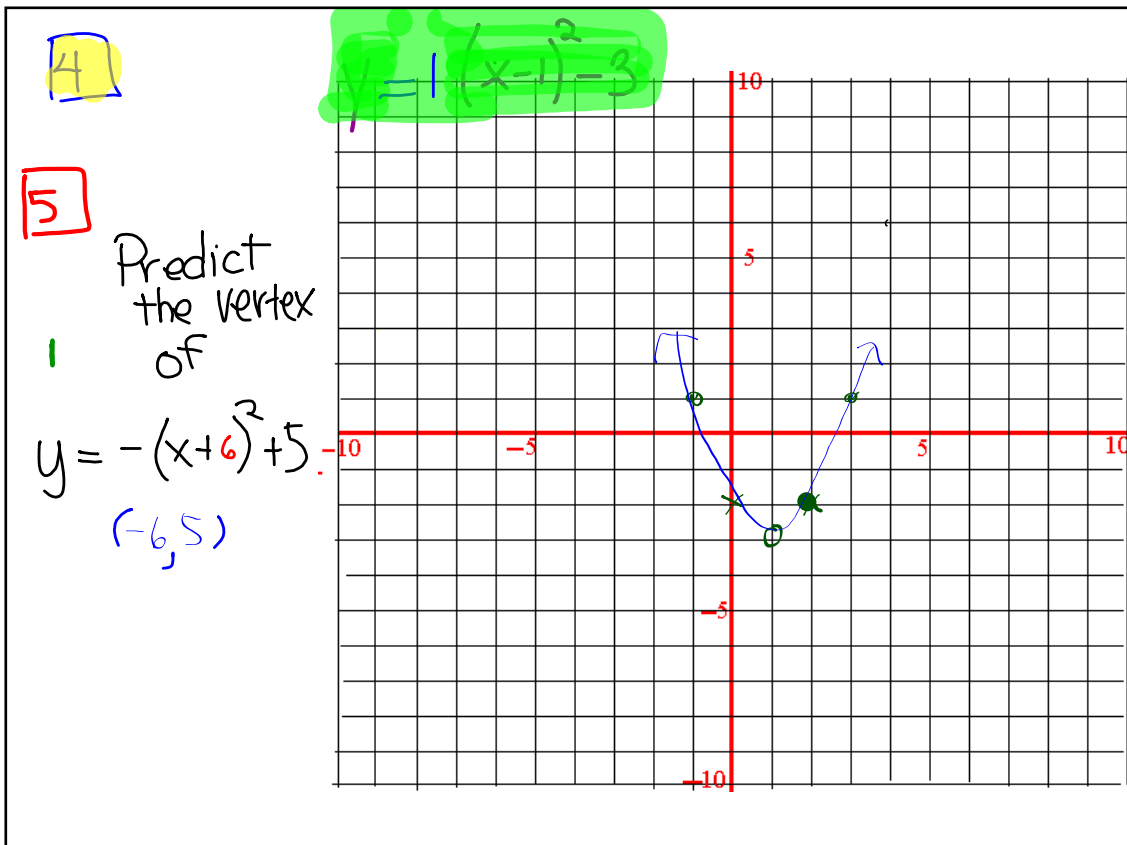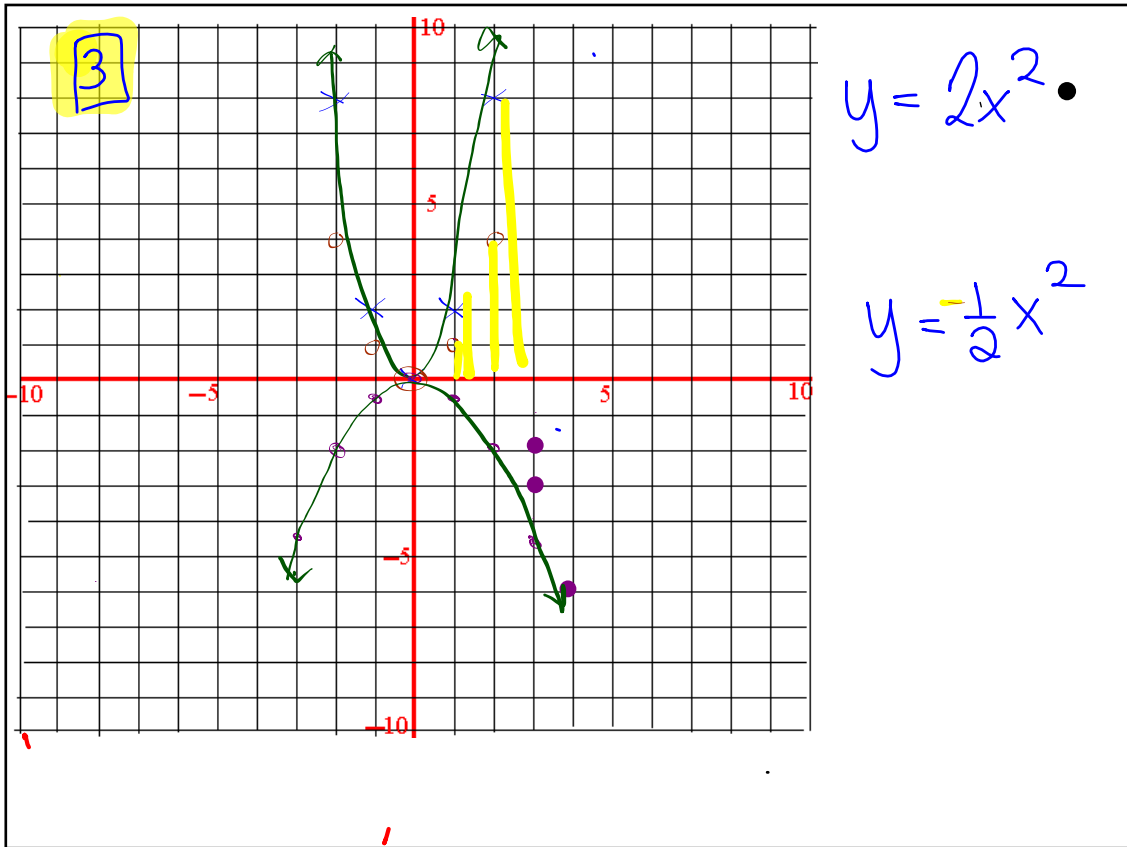
limited

Questions
on HW

24 $3(x-1)^2 - 5$

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

$(3x-3)(x-1) - 5$
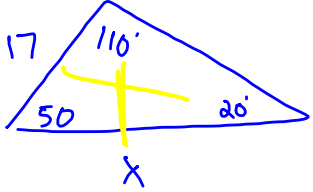
$3x^2 - 3x - 3x + 3 - 5$

$3x^2 - 6x + 3 - 5$

$y = 3x^2 - 6x - 2$

$(-1)^2 = \cancel{-1}$

$(x-1)(x-1) = \cancel{x^2 + 1}$

28 a

17   110°
50   20°
x

$$\frac{\sin A}{a} = \frac{\sin B}{b}$$

$$\frac{\sin 20°}{17} = \frac{\sin 110°}{x}$$

---

29   Parents spend $300/mo$ food

$100\% + 4\% = 104\%$

(a) 5 years __Inflation__ $y = 300(1.04)^5$

(b) __x - years from__

$y = 300(1.04)^x$

27a

$\sqrt{50}$

$= \sqrt{25}\sqrt{2}$

$= \boxed{5\sqrt{2}}$

4
9
16
25

27

$\sqrt{72}$

$\sqrt{4}\sqrt{18}$ $\sqrt{9}\sqrt{8}$ $\sqrt{36}\cdot\sqrt{2}$

$2\sqrt{9}\sqrt{2}$ $\boxed{6\sqrt{2}}$

$2\cdot3\cdot\sqrt{2}$

$\sqrt{30}$ $6\sqrt{2}$

4
9
16
25
36

24c

$$y = 3(x-1)^2 - 5 \quad \Big/ \quad y = 3x^2 - 6x - 2$$

$$y = 3(x-1)(x-1) - 5$$
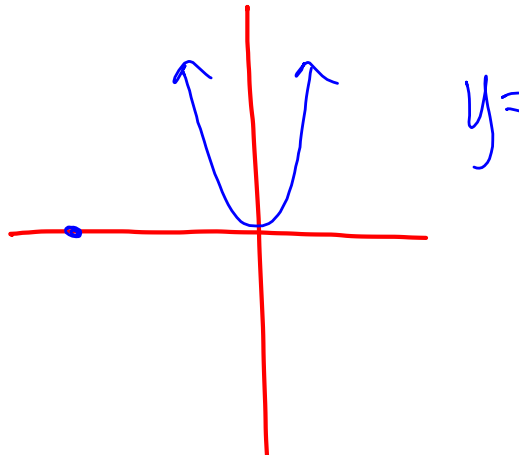
$$3x^2$$

25b   Parabola   Stretch factor of 10

Vertex   on   x-axis   at $x = -6$

a)

b)

c)

$y =$

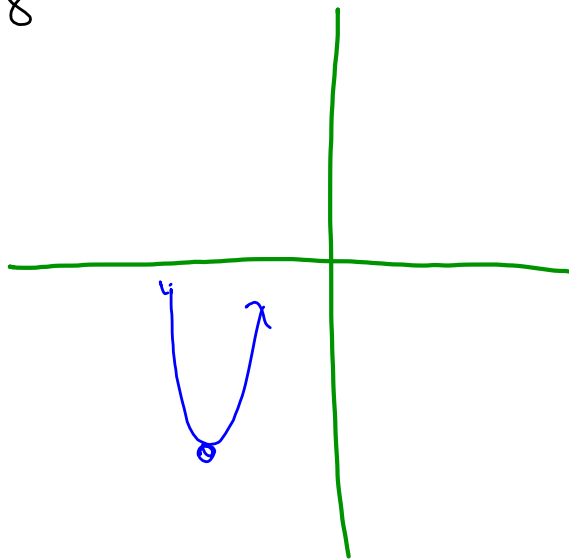26

$(3, -7)$ slope $\dfrac{2}{3}$

$(3 ; -7)$

23a   How can she get a good sketch from

$y = 2(x+3)^2 - 8$

$$\sqrt{50} = \sqrt{10}\sqrt{5} \qquad \sqrt{72}$$

4
9
16
25
36

25

ⓐ   ↻   →⃗ 8   5↓ $y = (x)^2$ $y = (x-8)^2 - 5$

ⓑ   Stretch factor 10 $y = (x)^2$ $y = 10(x+6)^2$
(-6, 0)

ⓒ   ⋃   (-7, -2)
0.6
compression

Today's objective(s)

Continue graphing parabolas given graphing form

$$y = \frac{1}{3}(x+7)^2 + 2$$

Graph from ~~standard~~ form
(by converting to graphing form)

Desmos

Demo of Graphing Form of a Parabola.

Parent: $y = x^2$

$$y = a(x-h)^2 + k$$

Desmos

Demo of Graphing Form of a Parabola.

$$y = a(x-h)^2 + k$$

Vertical Stretch factor

if negative
Parabola opens
down●

horizontal
translation
constant

$$(x+3)^2$$

slide to
the left

Vertical
translation
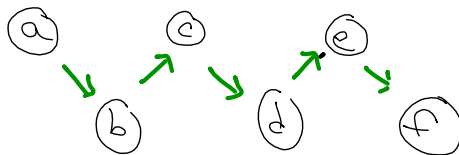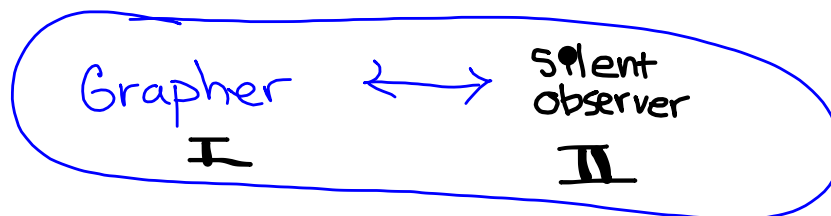constant

---

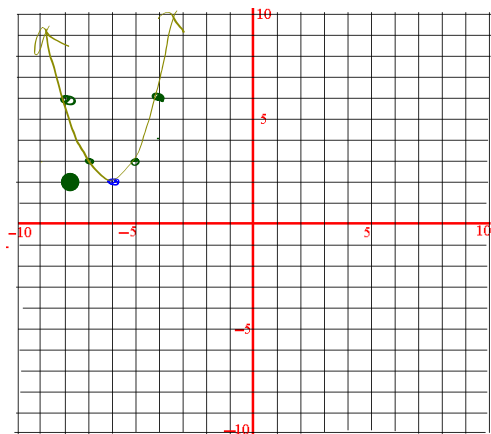Pairs should sit side by side
facing the front
of the room●

I   II

Turn your GDC over or take it off your desk.

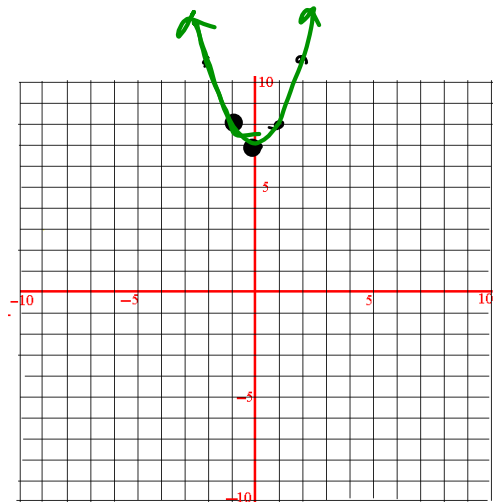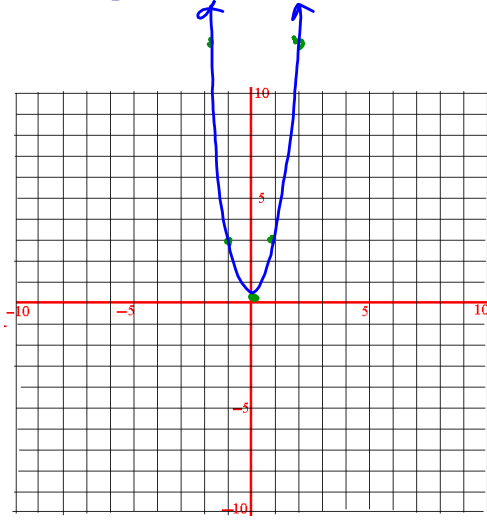Each pair will work on <u>one</u> sheet and will take turns.

Grapher ⟷ Silent observer
I   II

ⓐ ↘ ⓒ ↗ ↘ ⓔ ↗ ↘
     ⓑ   ⓓ   ⓕ

Use quick
graphing skills

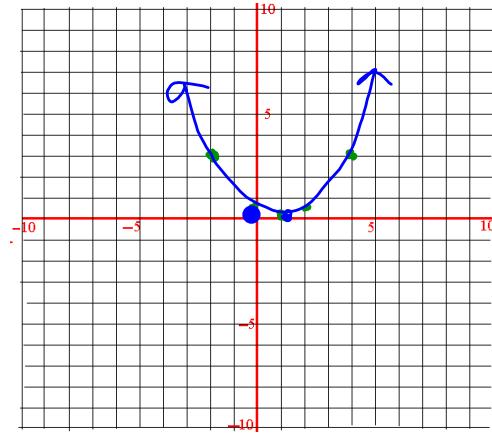ⓐ $y = (x + 6)^2 + 2$ ⓑ $y = x^2 + 7$ $y = (x-9)^2 + 7$
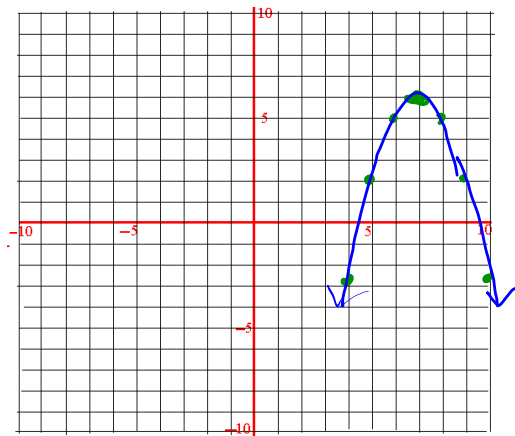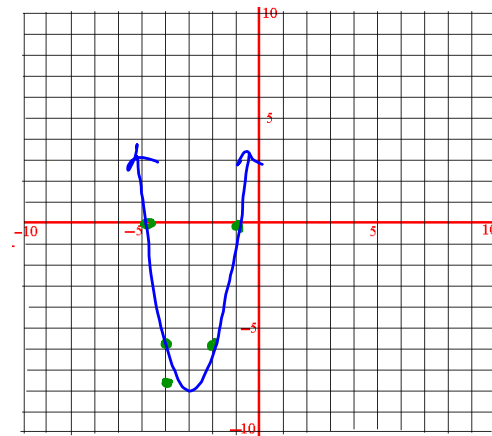
ⓒ $y = 3x^2$

Same as $3(x-0)^2$

ⓓ $y = \frac{1}{2}(x-1)^2$

ⓔ $y = -(x-7)^2 + 6$

ⓕ $y = 2(x+3)^2 - 8$

What do we need to Know about a Parabola to graph it quickly?

Vertex
orientation
stretch factor

Quiz

Assignment:

2 **- ... 35 - 38, 39abc, 40**

...... 41 is an _optional_ challenge

Ⓒ

$$y = 2x^2 + 4x - 30$$