

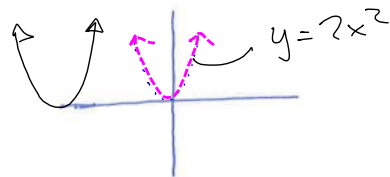
# Pick up the Warm Up

HW TALLY →

① Transfer the parabola  $y = 2x^2$  so it slides  
5 units to the left:

$$y = \underline{2(x+5)^2}$$

Then graph both  
simultaneously on your GDC  
and make a sketch.



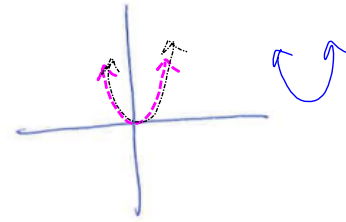
$$y = 2(x+5)^2$$

x

- ② Transform the parabola  $y = x^2 + 5x + 4$   
8 units to the right.

$y =$  

Graph and make a sketch



$$y = \underset{x}{(x-8)^2} + 5 \underset{x}{(x-8)} + 4$$

- ③ A transformed parabola is  $y = (x+6)^2$   
= What transformation took place?  
move 6 left

= What was the original function?

$$y = x^2$$

# Questions on HW

2-17

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

- a) y-intercept  $(0, -6)$   
 $x=0$
- b) x-intercept  $\dots \rightarrow y=0$

$$0 = x^2 + 5x - 6$$

$$\begin{aligned} a &= 1 \\ b &= 5 \\ c &= -6 \end{aligned}$$

Quadratic  
Formula

Factor, then  
Use the zero  
product property

$$x = \frac{-(-5) \pm \sqrt{(-5)^2 - 4(1)(6)}}{2(1)}$$

$$= \frac{-5 \pm \sqrt{49}}{2} = \frac{-5 \pm 7}{2}$$

$$x = \frac{-5+7}{2} = \frac{2}{2} = 1 \quad \begin{array}{l} \text{X-int} \\ (1, 0) \end{array}$$

$$x = \frac{-5-7}{2} = \frac{-12}{2} = -6 \quad \begin{array}{l} (-6, 0) \end{array}$$

(c)  $g(x) = x^2 + 5x$   $\rightarrow$  y-intercept

$$(0, 0)$$

x-intercept (y=0)

$$0 = x^2 + 5x$$

$$0 = x(x+5)$$

$$x = 0$$

$$x+5=0$$

$$x = -5$$

$$(0, 0)$$

$$(-5, 0)$$

$$\begin{aligned} \text{d) } & p(x) - q(x) \\ & x^2 + 5x - 6 - [x^2 + 5x] \\ & = x^2 + 5x - 6 - x^2 - 5x \\ & = -6 \end{aligned}$$

$$\begin{aligned} \boxed{19 \text{ (a)}} \quad & \left(\frac{1}{81}\right)^{-\frac{1}{4}} \rightarrow \left(\frac{81}{1}\right)^{\frac{1}{4}} \rightarrow (81)^{\frac{1}{4}} \\ & \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \searrow \\ & \qquad \qquad \qquad \qquad \qquad \qquad \qquad \qquad \sqrt[4]{81} \\ \sqrt[3]{(x)^7} & \rightarrow x^{\frac{7}{3}} \end{aligned}$$

$$b \quad x^{-2} \cdot y^{-4}$$

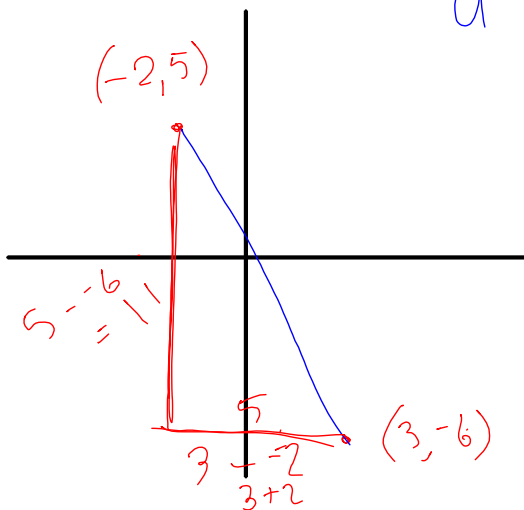
$$= \frac{1}{x^2} \cdot \frac{1}{y^4} = \frac{1}{x^2 y^4}$$

$$\left( \frac{1}{x^2 y^4} \right)$$

21a

$(3, -6)$

$(-2, 5)$



$$a^2 + b^2 = c^2$$

$$\begin{array}{r} 3p + 3d = 22.50 \rightarrow -3p - 3d = 22.50 \\ + \quad p + 3d = 13.50 \\ \hline \end{array}$$

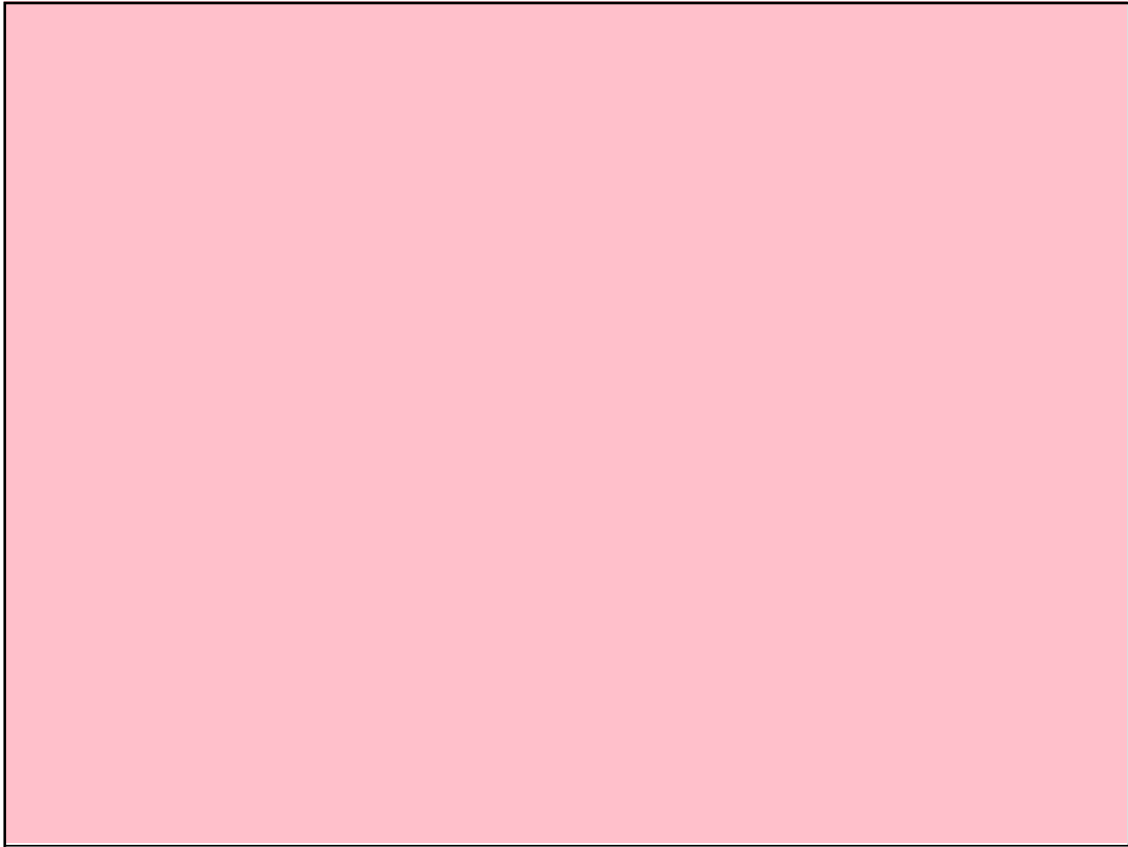
(a)  $p + 3d + 24 = 37.50$

(b)

21a

answer

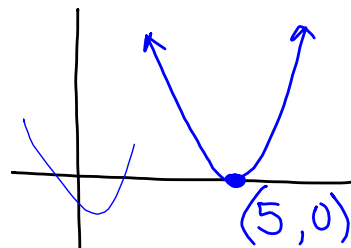
$$\sqrt{146} \approx 12.1$$



RECAP  
From yesterday

$$y = (x-5)(x-5)$$

?



Why does  $y = (x-5)(x-5)$  only touch  
the x-axis at  $x=5$  ?



RECAP  
From yesterday

$$y = (x - \quad)(x - \quad)$$

?



Why does  $y = (x-5)(x-5)$  only touch the x-axis at  $x=5$  ?

Where will  $y = (x-8)(x-8)$  touch the x-axis?

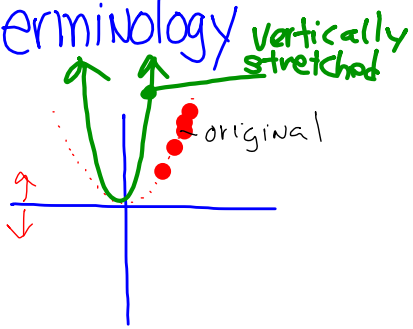
$$y = (x+2)(x+2) \quad ?$$

$$y = (x-4)^2$$

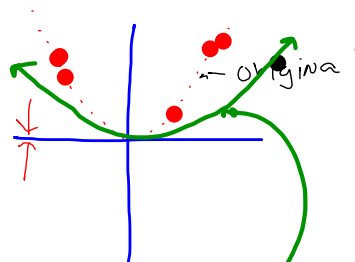
$$y = (x+3)(x-1)$$

NOTES

Terminology



Vertical stretch



Vertical shrink  
(compression)



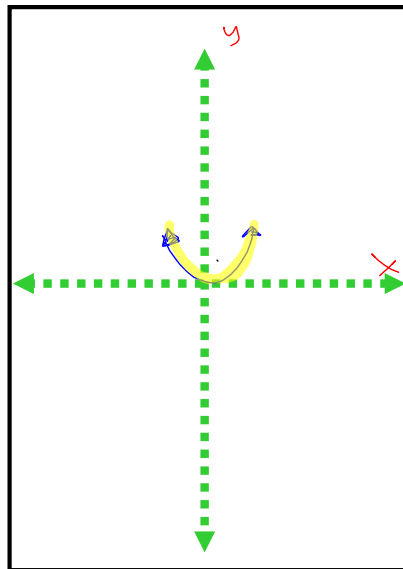
NOTES - Top of a new sheet

Determine all of the ways to transform a **PARABOLA** by changing its equation.

↗  
**Today's  
AIM**

$$y = x^2$$

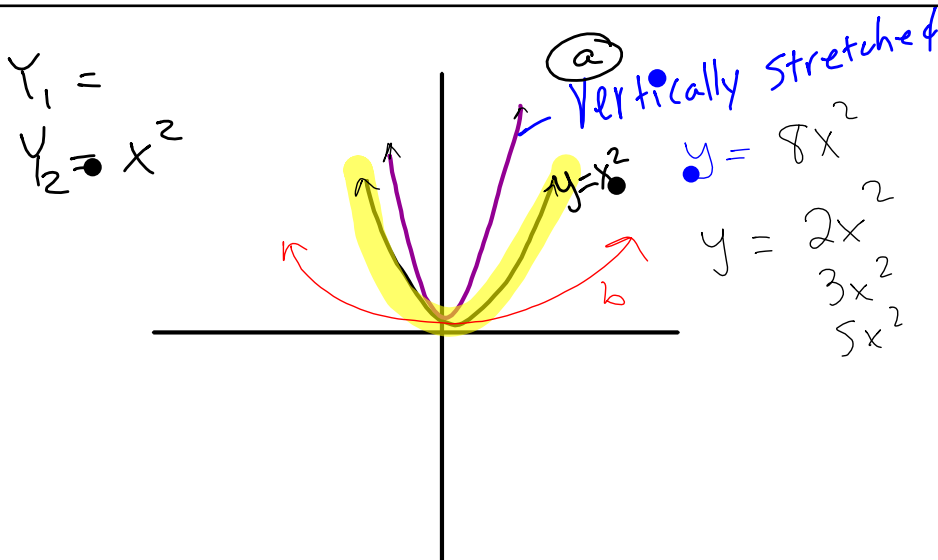
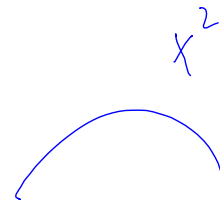
highlight

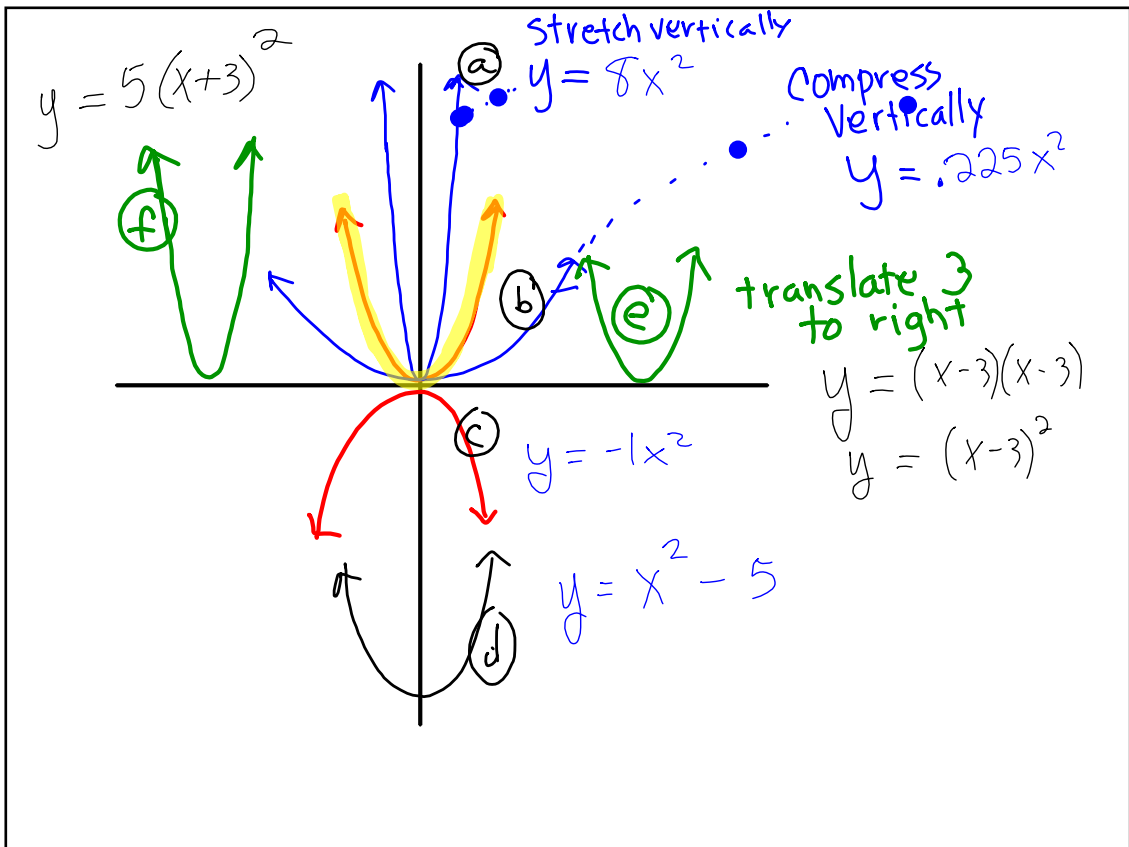
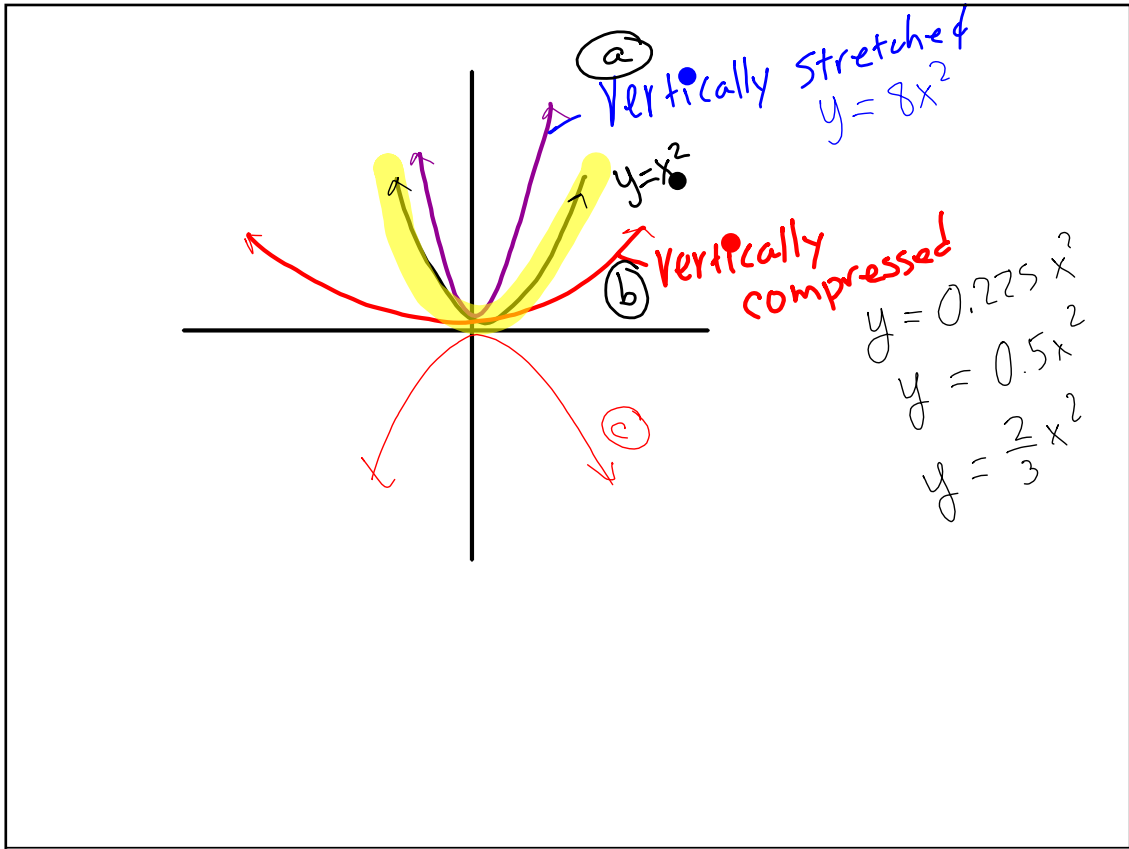


# Work through

$$2 - 13$$

on page 62

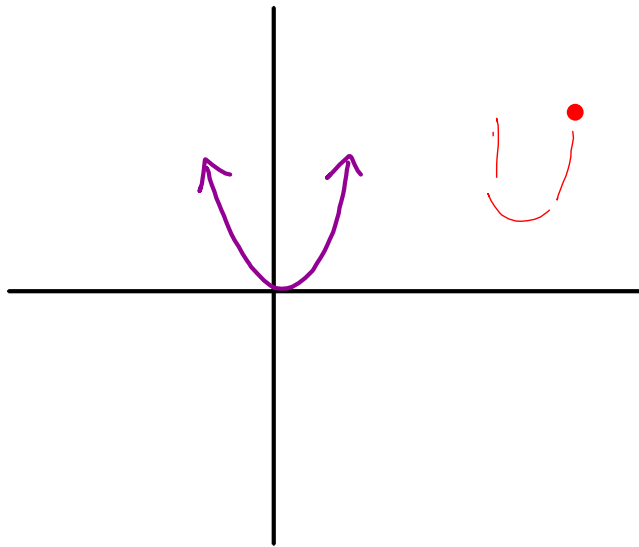




B.B.

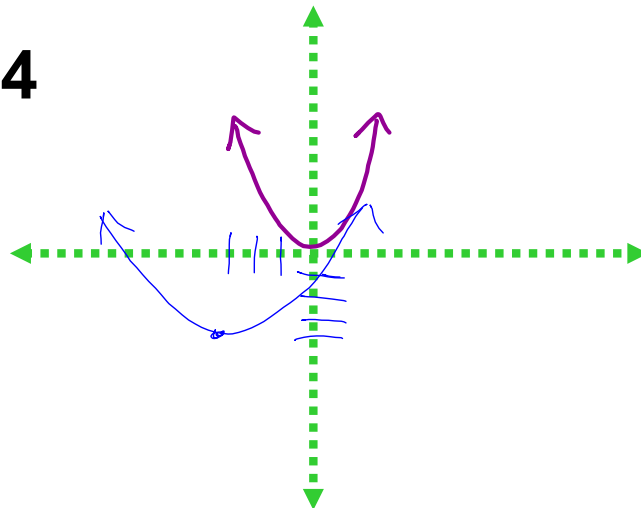
**Closure**

$$y = 2(x - 6)^2 + 3$$



Without Using a GDC, sketch the following....

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



**Assignment**

**2 - 23, 25, 27, 28a, 29**

pdf