

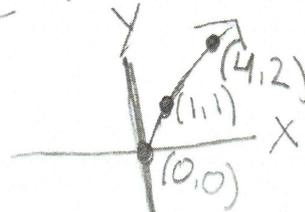
MAT 1340

Will Hamilton

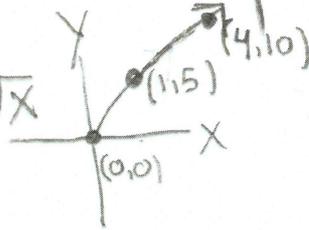
①  $g(x) = 5\sqrt{3x-2} - 2$

$\frac{34}{50}$

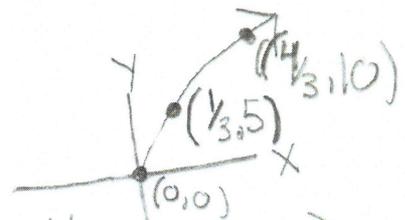
①  $f(x) = \sqrt{x}$



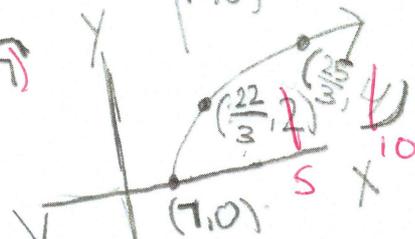
②  $= 5\sqrt{x}$



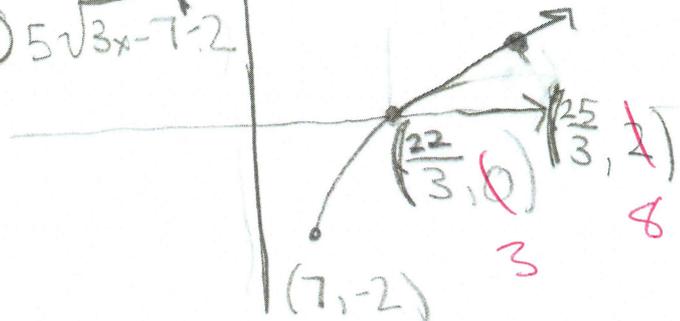
③  $5\sqrt{3x}$



④  $5\sqrt{3(x-7)}$



⑤  $5\sqrt{3x-7} - 2$

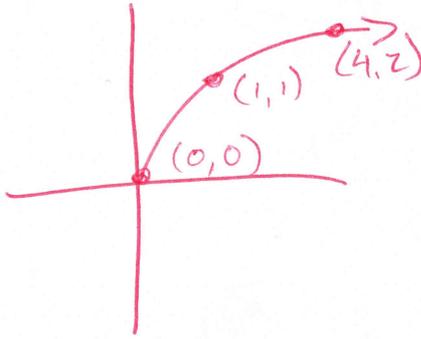


+H

# MAT 1340

Will Hamilton

like this!



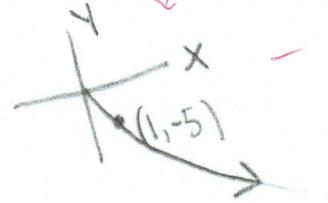
②  $g(x) = -5\sqrt{3x-2} + 2$

①  $g(x) = \sqrt{x}$

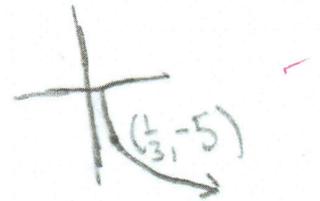


Draw BIG!

②  $-5\sqrt{x}$   $(1, -5)$



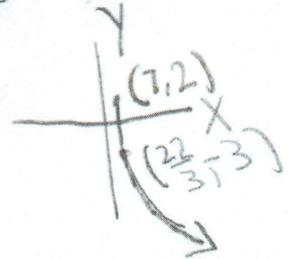
③  $-5\sqrt{3x}$   $(\frac{1}{3}, -5)$



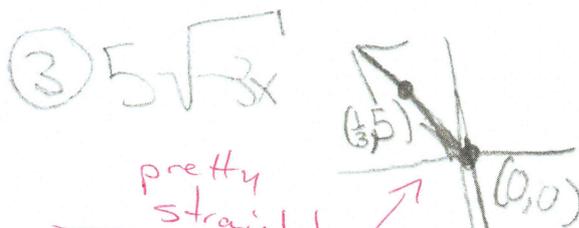
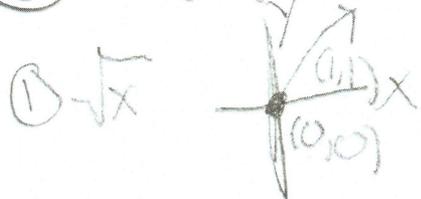
④  $-5\sqrt{3(x-7)}$   $(\frac{22}{3}, -5)$

Pic?

⑤  $-5\sqrt{3(x-7)} + 2$   $(\frac{22}{3}, -3)$



③  $g(x) = 5\sqrt{3x-21} - 11$

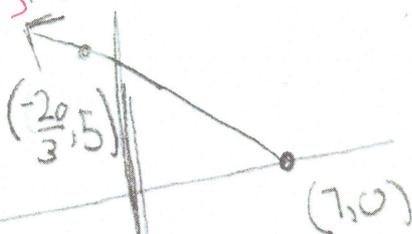


Be sure to show that this is like curves.

④  $5\sqrt{-3(x+7)}$

pretty straight

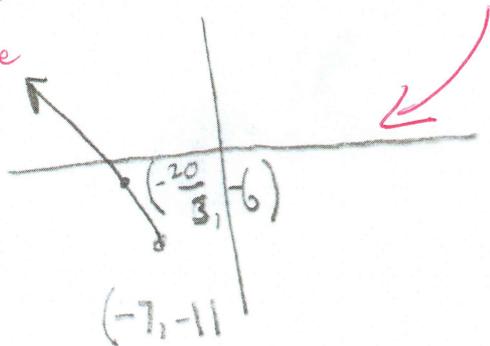
yes shift Left!



How?

⑤  $5\sqrt{-3(x-7)} - 11$

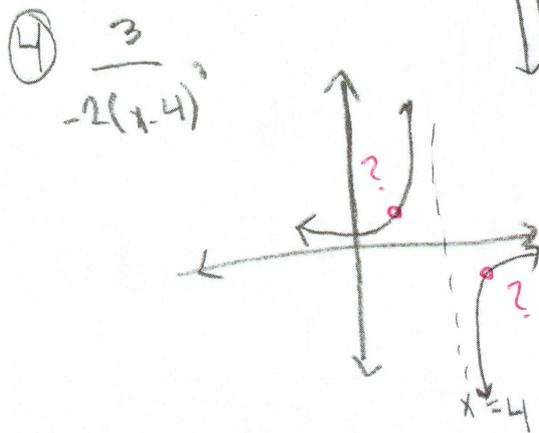
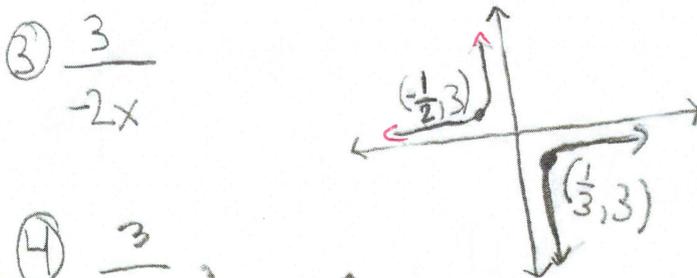
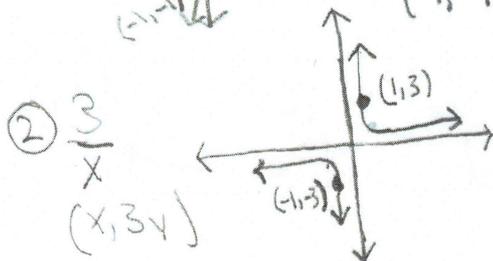
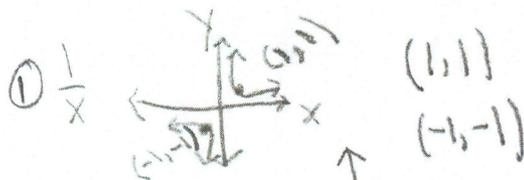
nope, had it before



MAT 1340

Will Hamilton

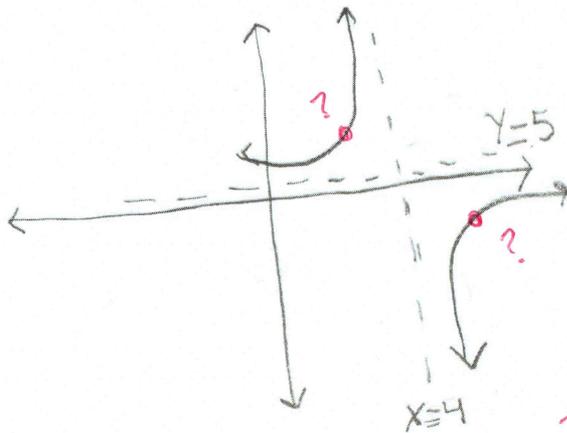
④  $g(x) = \frac{3}{(-2x+8)^3} + 5$



⑤  $\frac{3}{-2(x-4)^3} + 5$

x=4

y=5

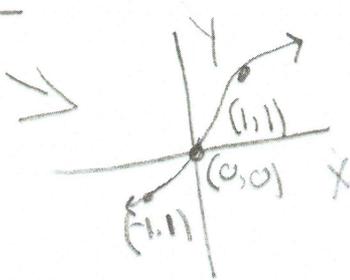


# MAT 1340

Will Hamilton

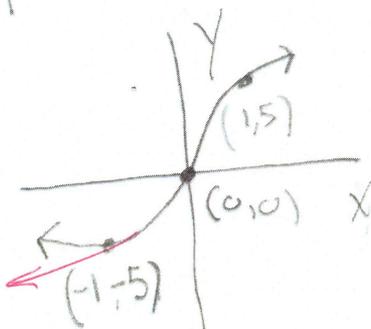
⑤  $g(x) = 5\sqrt[5]{3x+21} - 6$

①  $\sqrt[5]{x}$

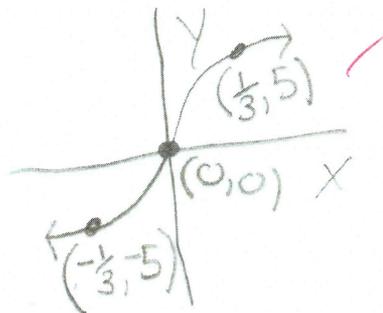


②  $5\sqrt[5]{x}$

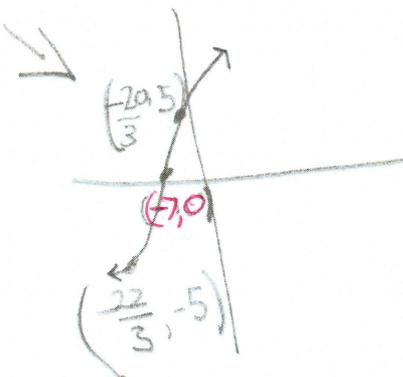
*I don't go back up*



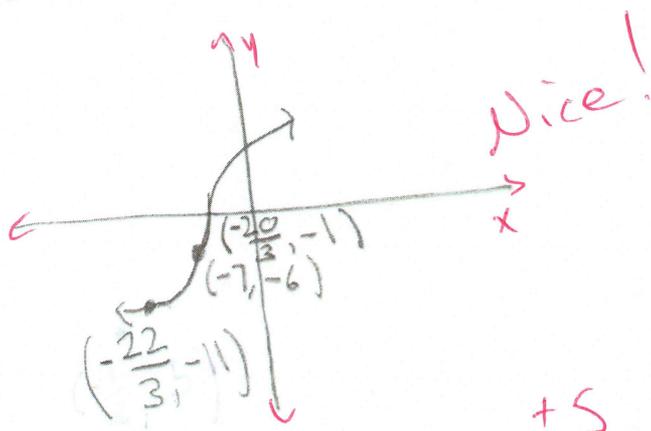
③  $5\sqrt[5]{3x}$



④  $5\sqrt[5]{3(x+7)}$



⑤  $5\sqrt[5]{3(x+7)} - 6$



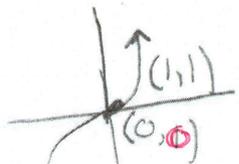
+5

MAT 1340

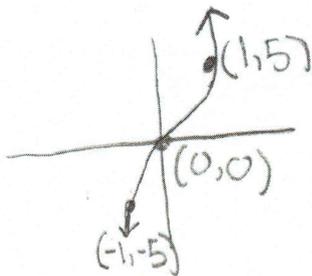
Will Hamilton

⑥  $g(x) = 5(3+2x)^5 - 6$   
 $5(3(x+7))^5$

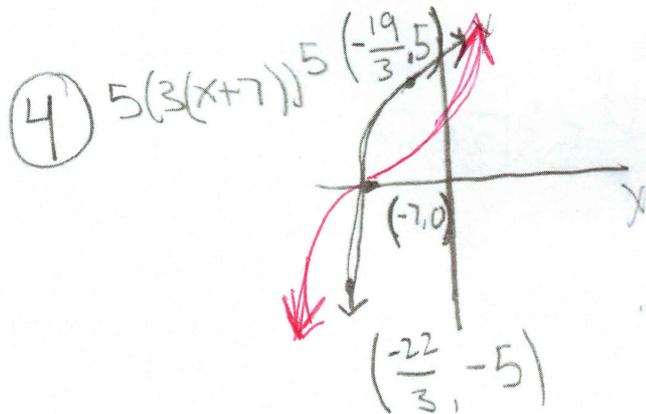
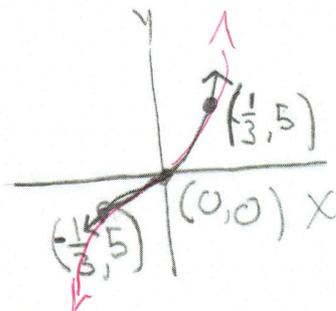
①  $x^5$



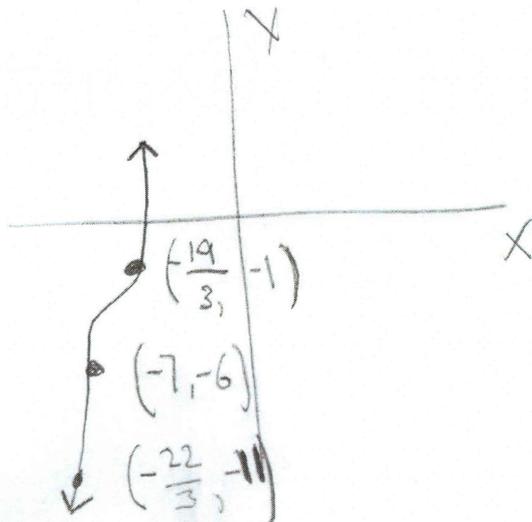
②  $5x^5$



③  $5(3x)^5$



⑤  $5(3x+21)^5 - 6$



+4.5

MAT1340

Will Hamilton

$$\textcircled{1} g(x) = 3(x+5) - 7$$

$$h = -5$$

$$k = -7$$

$$(-5, -7)$$

$$(0, 8)$$

$$\left(-\frac{8}{3}, 0\right)$$

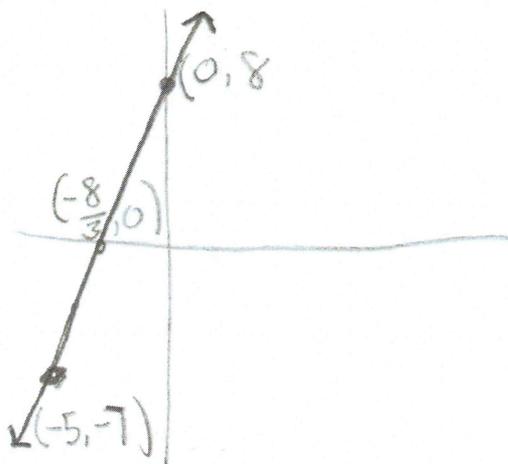
$$x = -\frac{8}{3}$$

$$3x + 8 = 0$$

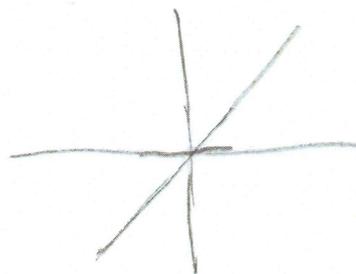
$$3x = -8$$

$$\frac{3x}{3} = \frac{-8}{3}$$

$$x = -\frac{8}{3}$$



$$\textcircled{2} y = x$$



MAT 1340

Will Hammett

⑧  $g(x) = 3(x+5)^2 - 7$

①  $x^2$

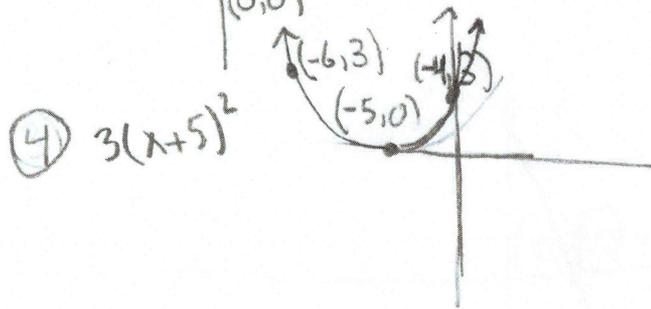
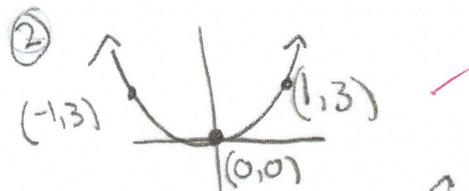
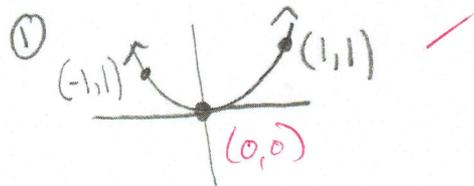
②  $3x^2$

③

④  $3(x+5)^2 - 7$

⑤  $3(x+5)^2 - 7$

$(-1,1)(1,1)(0,0)$

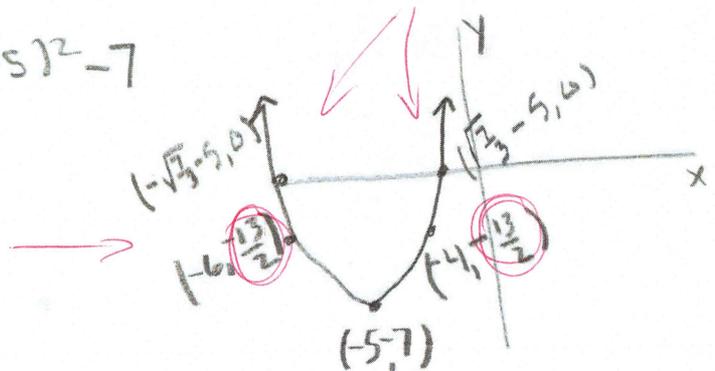


④  $3(x+5)^2$

$(-5,0)(-6,3)(-4,3)$

⑤  $3(x+5)^2 - 7$

*Intercepts - nice!*



- Arithmetic error ...
- Shift y down 7
- $y_0 = 3 \rightarrow y - 7 = -4$

+4.5

# MAT 1340

# Will Hamilton

9)  $g(x) = x^2 - 4x - 7$

$$x^2 - 4x + \left(\frac{-4}{2}\right)^2 = 7 + \left(\frac{-4}{2}\right)^2$$

$$x^2 - 4x + 4 = 7 + 4$$

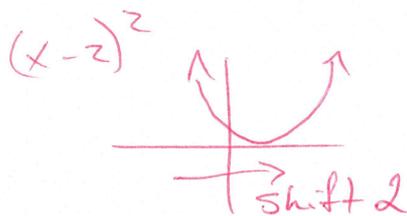
$$(x - 2)(x - 2) = 11$$

$$\sqrt{(x-2)^2} = \sqrt{11}$$

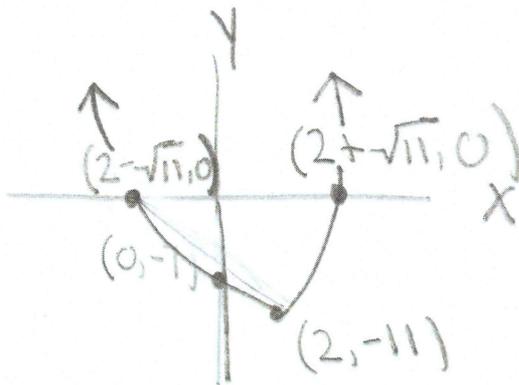
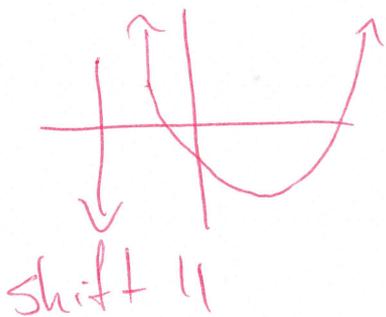
$$(h, k) = (2, -11)$$

start here  $\leftarrow$

$$\frac{(x-2)^2 - 11}{x^2}$$



$$(x-2)^2 - 11$$



# MAT 1340

Will Hamilton

⑩  $g(x) = 4x^2 + 5x + 17$

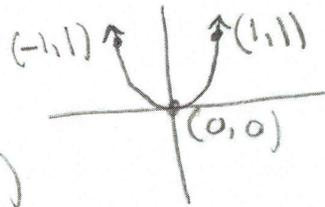
$$4\left(x^2 + \frac{5}{4}x + \left(\frac{25}{64}\right)\right) + 17 - \left(\frac{25}{64}\right)4$$

$$4\left(x^2 + \frac{5}{4}x + \frac{25}{64}\right) + 17 - \frac{100}{64}$$

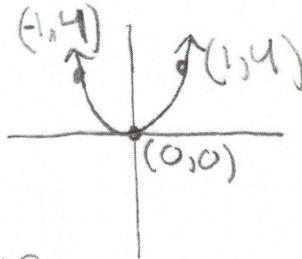
$$4\left(x + \frac{5}{8}\right)\left(x + \frac{5}{8}\right) + \frac{247}{16}$$

$$4\left(x + \frac{5}{8}\right)^2 + \frac{247}{16} \leftarrow \text{nice!}$$

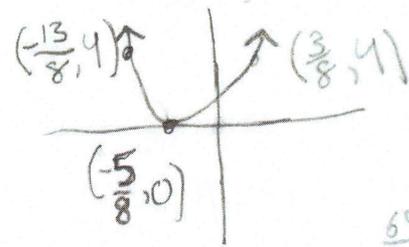
①  $x^2$



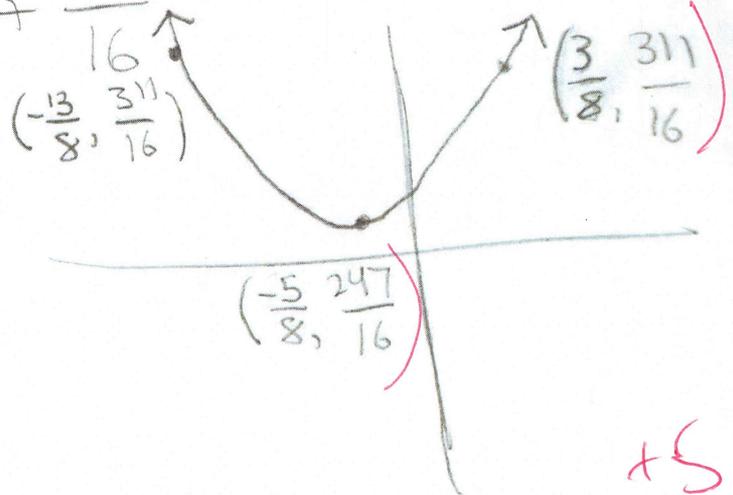
②  $4x^2$



③  $4\left(x + \frac{5}{8}\right)^2$



④  $4\left(x + \frac{5}{8}\right)^2 + \frac{247}{16}$



Nice work!

$$\frac{64}{16} + \frac{247}{16}$$

HS