

16
50

Piccone

$$1. \quad g(x) = 5\sqrt{3x-2} - 2$$

Domain: $x \in \mathbb{Z}$
 $[7, \infty)$

$$f(7) = 5\sqrt{3(7)-2} - 2 \rightarrow f(7) = 5\sqrt{0} - 2$$

$$f(7) = 5\sqrt{0} - 2$$

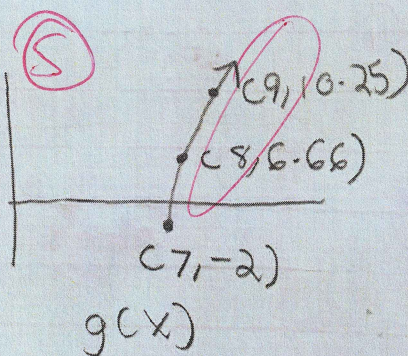
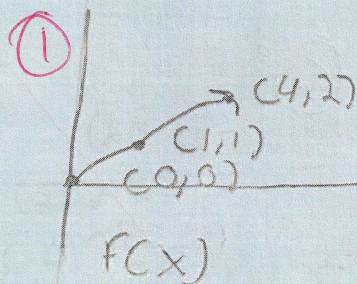
$$f(7) = 0 - 2$$

$$f(7) = -2$$

$$(7, -2)$$

$$f(8) = 6.66$$

$$f(9) = 10.25$$



different is
from step ①

Where are steps 2-4?

+1.5

$$2. g(x) = -5\sqrt{3x-2} + 2$$

Domain: $x \geq \frac{2}{3}$

$[\frac{2}{3}, \infty)$

$$f(7) = -5\sqrt{3(7)-2} + 2$$

$$f(7) = -5\sqrt{3(0)} + 2$$

$$f(7) = -5\sqrt{0} + 2$$

$$f(7) = -5\sqrt{0} + 2$$

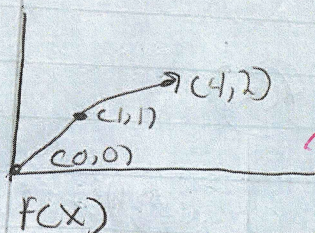
$$\rightarrow f(7) = -5(0) + 2$$

$$f(7) = 0 + 2 \rightarrow \boxed{f(7) = +2}$$

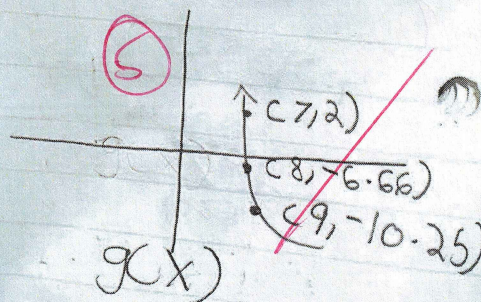
$$f(8) = (8, -6.66)$$

$$f(9) = (9, -10.25)$$

①



⑤



Hard to say what
went wrong without
all the steps

+1.5

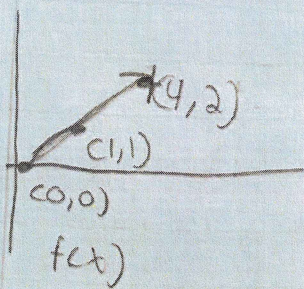
$$3. \quad g(x) = 5\sqrt{-3x-21} - 11$$

$$\text{Domain: } x \leq -7 \\ (-\infty, -7]$$

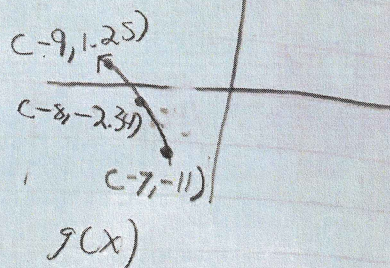
$$f(-7) = 5\sqrt{3(-(-7))-7} - 11 \rightarrow f(-7) = 0 - 11 \rightarrow \\ f(-7) = -11 \quad \boxed{(-7, -11)}$$

$$f(-8) = 5\sqrt{3(-(-8))-7} - 11 \rightarrow -2.34$$

$$f(-9) = 5\sqrt{3(-(-9))-7} - 11 \rightarrow 1.25$$



How?



+1.5

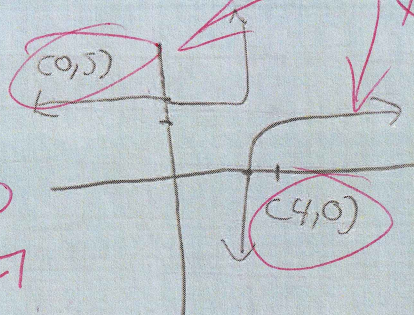
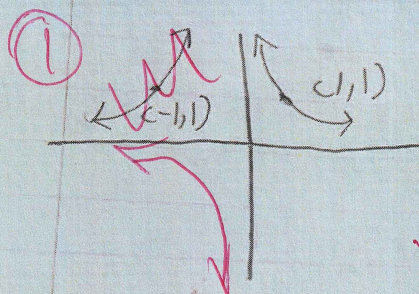
$$4. g(x) = \frac{3}{(x-2x+8)^3} + 5$$

$$\frac{a}{b} = \frac{-40}{-8} \rightarrow y=5$$

$$n=3$$

$$m=3$$

$$x=4$$



How

Different (from #1)
x's, not good

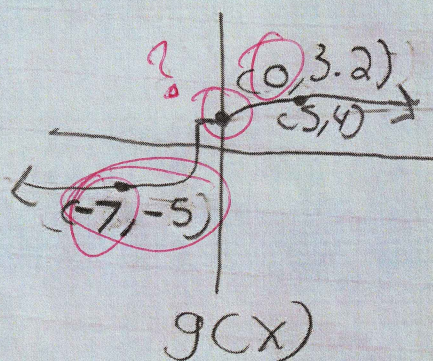
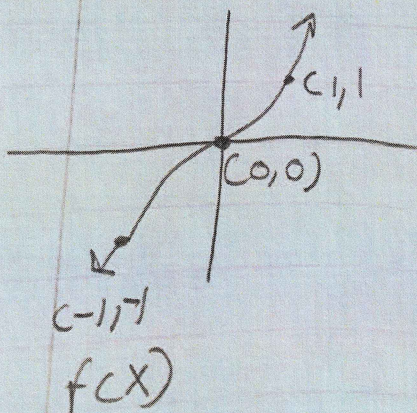
+1.5

$$5. g(x) = 5\sqrt[5]{3x+21} - 6$$

$$y = 5\sqrt[5]{3x+21} - 6 \rightarrow f(0) = 5\sqrt[5]{21} - 6$$

Domain: $(-\infty, \infty)$

same issues here

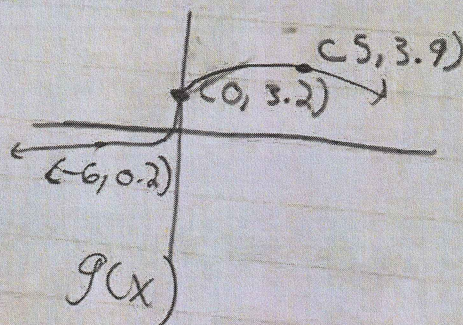
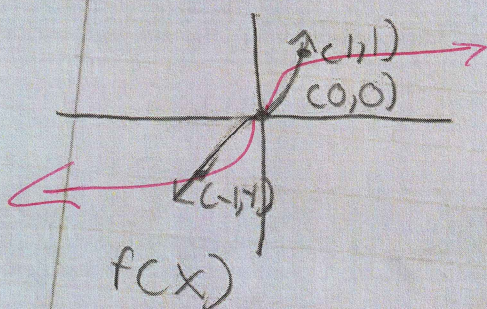


~~+~~

+1.5

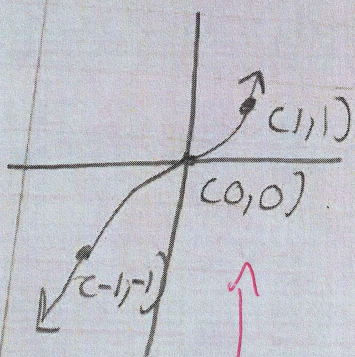
$$5. g(x) = 5\sqrt[5]{3x+21} - 6$$

Use the x/y's from the start in your transformations

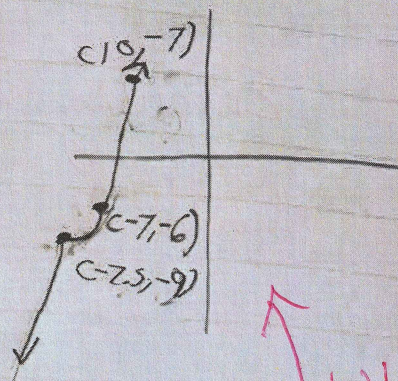


+2

$$6. g(x) = 5(3x+21)^5 - 6$$



Perfect



Why change the relative x?

+1.5

+3.5

MAT-1340

7. $g(x) = 3(x+5) - 7$

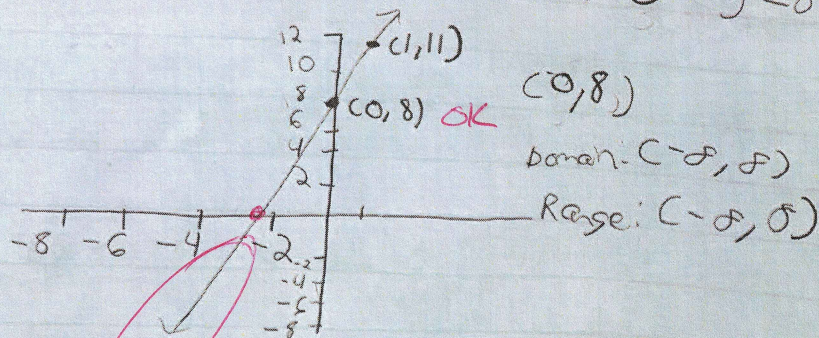
$$x = 3(y+5) - 7 \rightarrow x = 3y + 15 - 7$$

$$3y + 8 = x - 8 \quad \frac{3y}{3} = \frac{x-8}{3}$$

$$y = \frac{1}{3}x - \frac{8}{3} \rightarrow g(x) = \frac{1}{3}x - \frac{8}{3}$$

$x+5 \geq 7 \rightarrow \text{domain} = \mathbb{R}$

$x \text{ int: } 0 \quad y = 8$

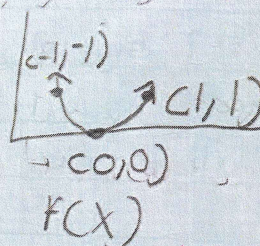
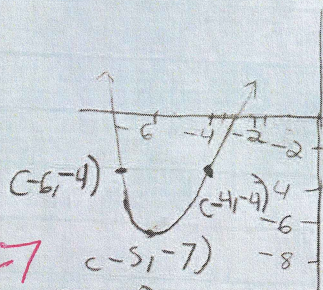


Everything I'm looking for
should be in here.

+1.5

MATH 1590

8. $g(x) = 3(x+5)^2 - 7 \rightarrow f(-6) = -3(-6)^2 + 30(-6) + 68$
 $= -4 \rightarrow (C-6, -4)$
 $a=3 \quad h=-5 \quad k=-7$
 $f(-7) = 3(-7)^2 + 30(-7) + 68$
 $(-7, 5)$

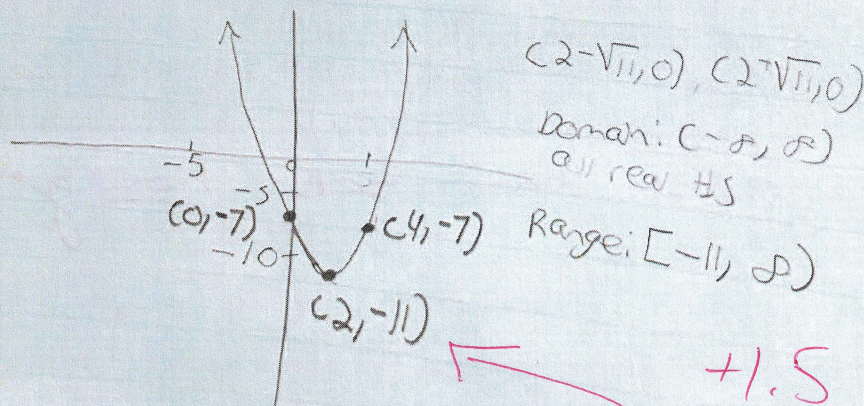


Good, still need to see how it got there.

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

coefficients: $a=1, b=-4, c=-7$

$x = \frac{-(-4) \pm \sqrt{(-4)^2 - 4(1)(-7)}}{2(1)} \rightarrow \frac{4 \pm \sqrt{16 + 28}}{2}$
 $x = \frac{4 \pm \sqrt{44}}{2} \rightarrow x = \frac{4 \pm 2\sqrt{11}}{2} \rightarrow x = 2 \pm \sqrt{11}$



Again, no pictures to show how you got here.

+3.5

MAT1340

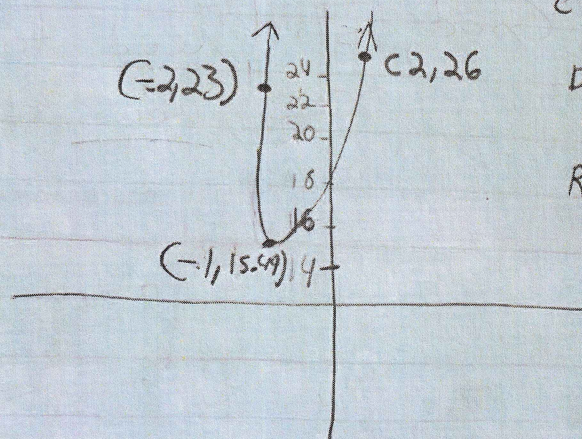
$$10. g(x) = 4x^2 + 5x + 17$$

$$a=4 \quad b=5$$

$$x = \frac{-5}{2(4)} \rightarrow x = -\frac{5}{8}$$

$$g\left(-\frac{5}{8}\right) = 4\left(-\frac{5}{8}\right)^2 + 5\left(-\frac{5}{8}\right) + 17 = \frac{247}{16}$$

$$\left(-\frac{5}{8}, \frac{247}{16}\right)$$



$$\left(-\frac{5}{8}, \frac{247}{16}\right)$$

Domain: $(-\infty, \infty)$
All Real #'s

Range: $\left[\frac{247}{16}, \infty\right)$

Can potentially get more points

if I can see how you got there.

+1.5