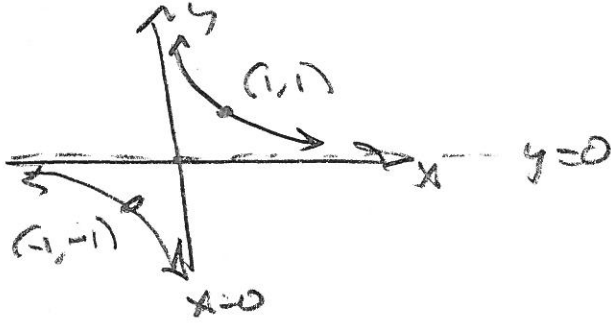


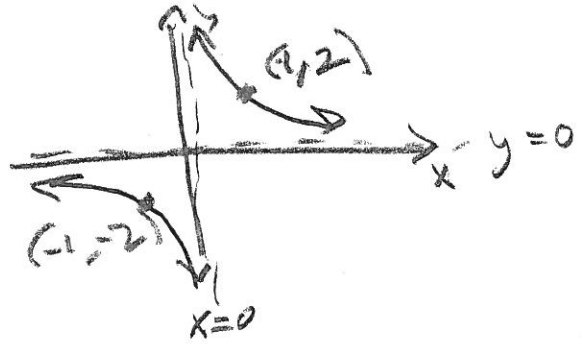
① $g(x) = \frac{2}{5x+15} + 7 = \frac{2}{5(x+3)} + 7$

m1 m2

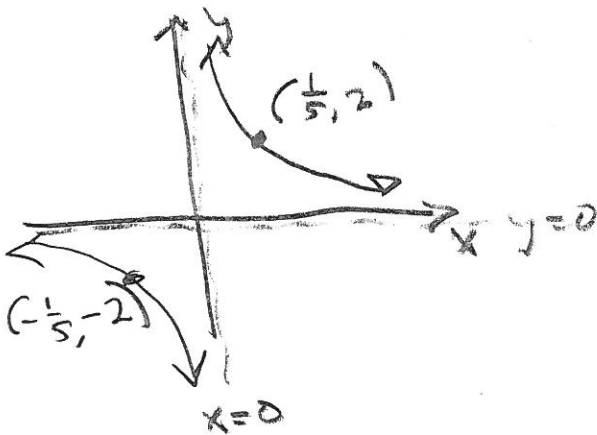
② $f(x) = \frac{1}{x}$



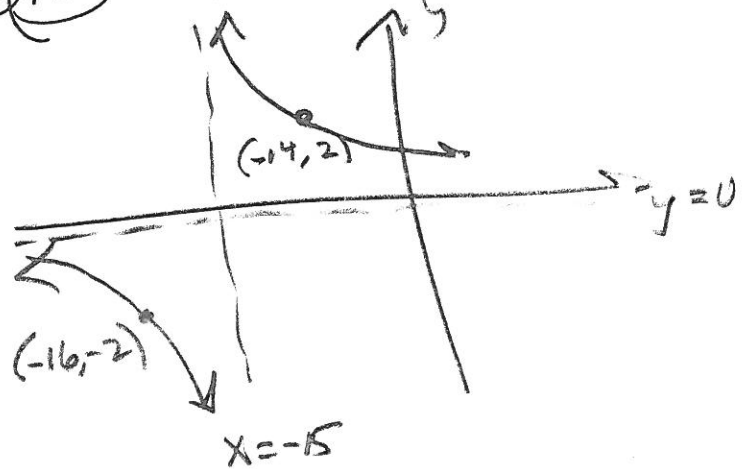
① $2f(x) = \frac{2}{x}$



② M2 $\frac{2}{5x} = 2f(5x)$



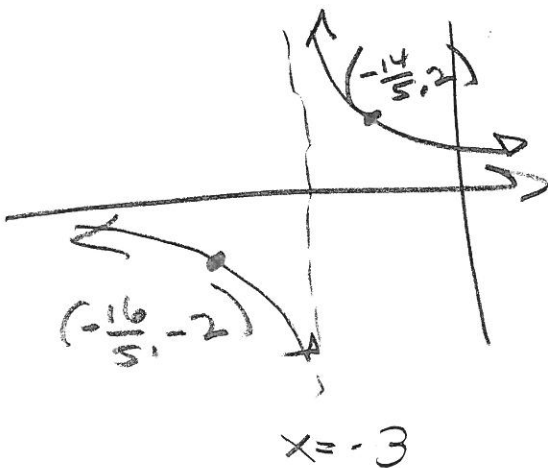
② M1 $2f(x+15)$



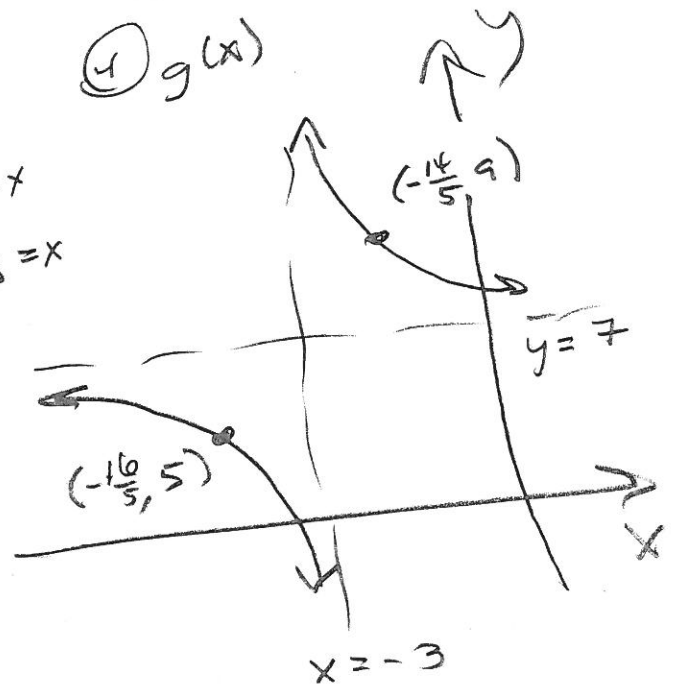
③ $2f(5x+15) = 2f(5(x+3))$

m1 m2

④ $g(x)$



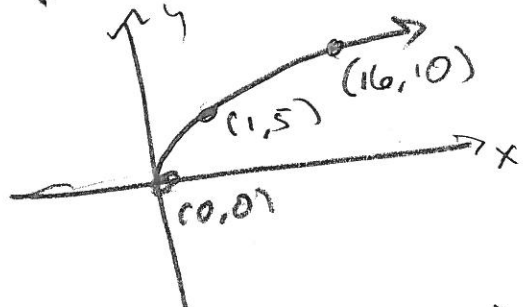
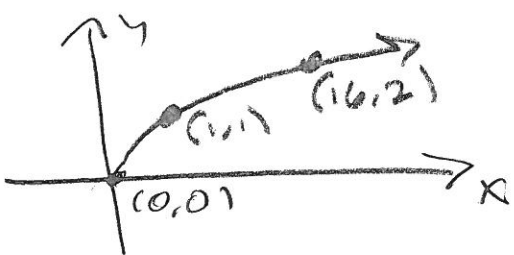
$m1: -\frac{14}{5} = x$
 $m2: \frac{1}{5} - 3 = x$



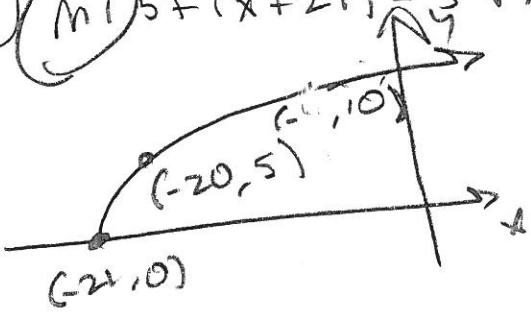
(2) $g(x) = 5(7x+21)^{\frac{1}{4}} - 13$

(0) $f(x) = x^{\frac{1}{4}} = \sqrt[4]{x}$

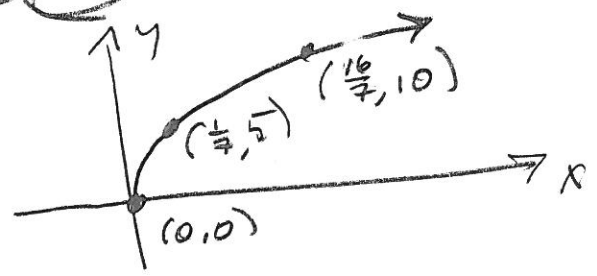
(1) $5f(x) = 5\sqrt[4]{x}$



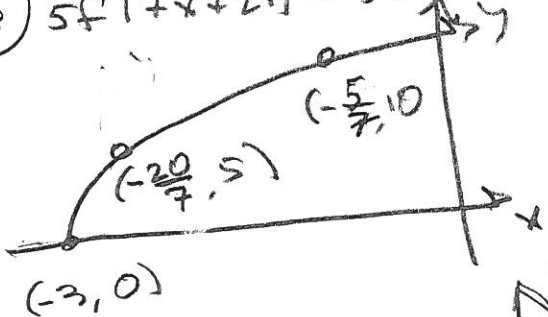
(2) (M1) $5f(x+21) = 5\sqrt[4]{x+21}$



(2) (M2) $5f(7x)$

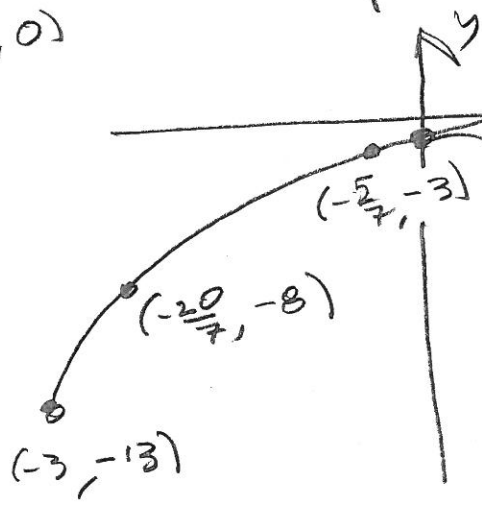


(3) $5f(7x+21) = 5f(7(x+3))$



(M1) $-21 = \dots, -\frac{20}{7}, -\frac{1}{7}$
(M2) $\frac{1}{7} - 3, \frac{16}{7} - 3$

(4)

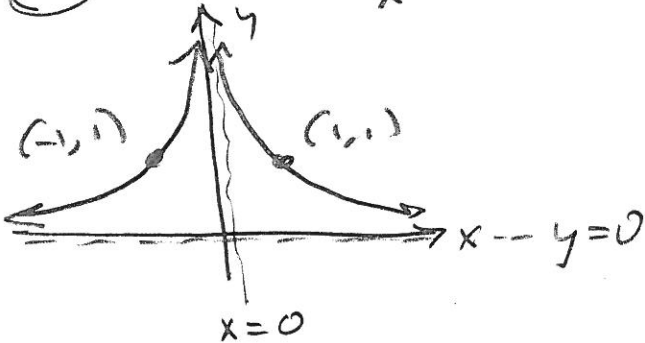


x-int: Solve $g(x) = 0$

y-int: $g(0) = 5(21)^{\frac{1}{4}} - 13 \approx -2.2965$

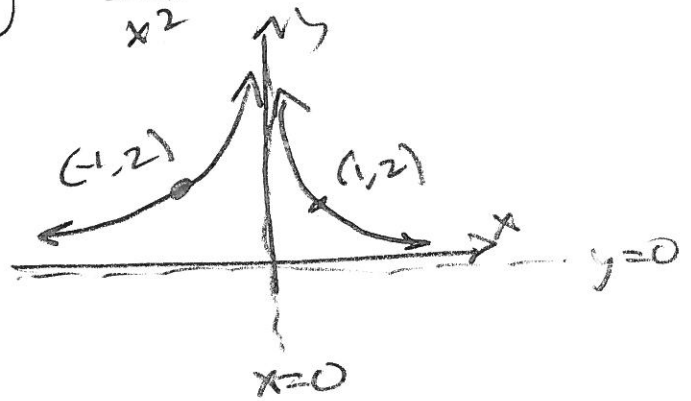
(3) $g(x) = \frac{2}{(5x+15)^2} + 7$

(0) $f(x) = \frac{1}{x^2}$

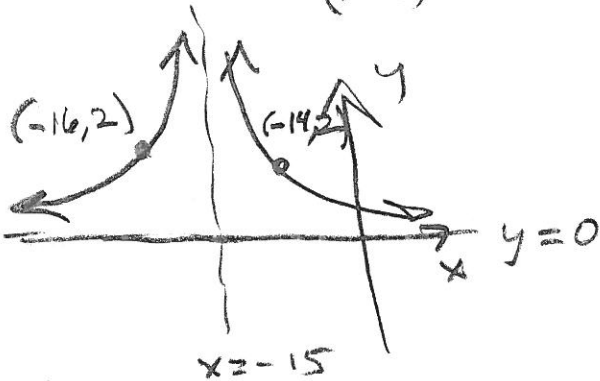


(1)

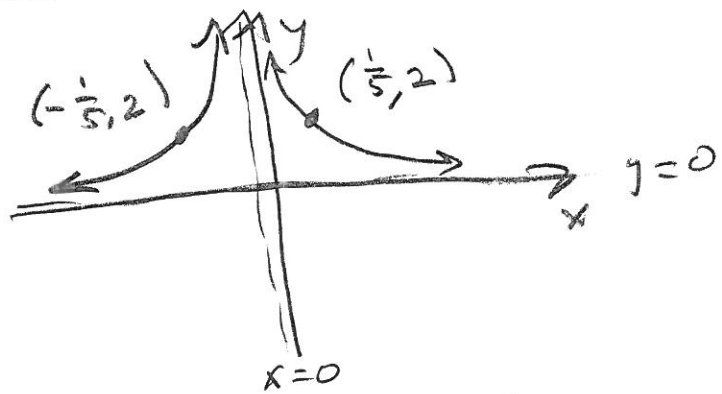
$\frac{2}{x^2}$



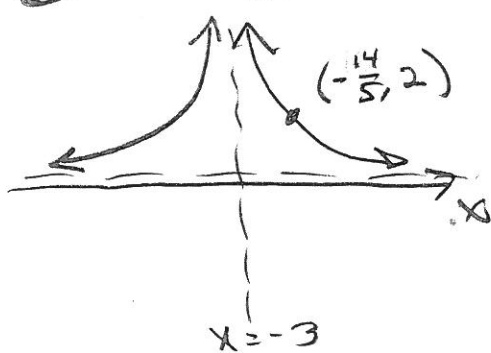
(2) (M1) $2f(x+15) = \frac{2}{(x+15)^2}$



(2) (M2) $2f(5x) = \frac{2}{(5x)^2}$

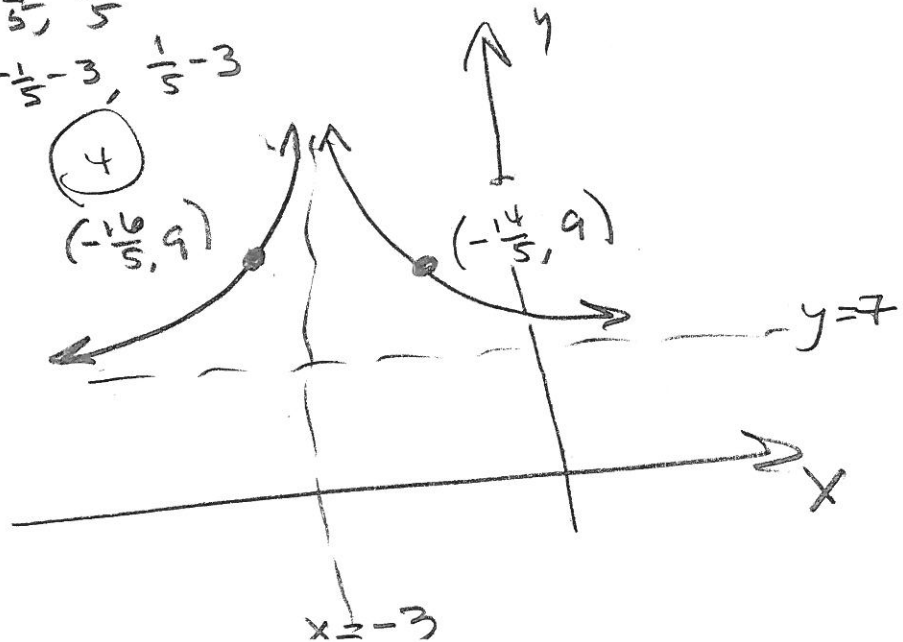


(3) $2f(5x+15) = 2f(5(x+3))$

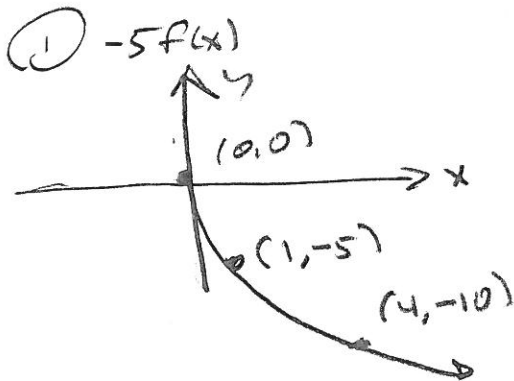
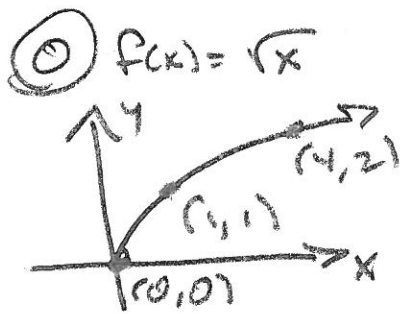


(M1) $-\frac{16}{5}, \frac{16}{5}$
 (M2) $-\frac{1}{5}-3, \frac{1}{5}-3$
 $y=0$

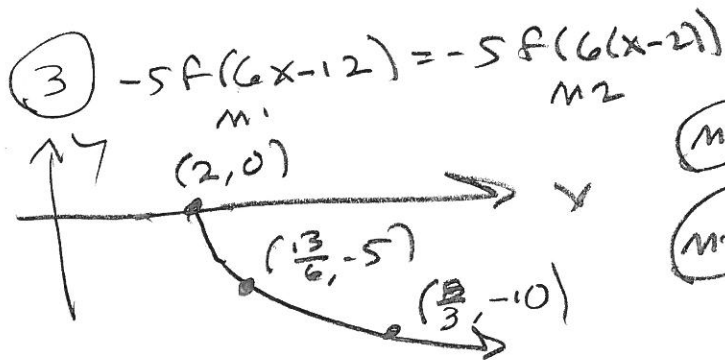
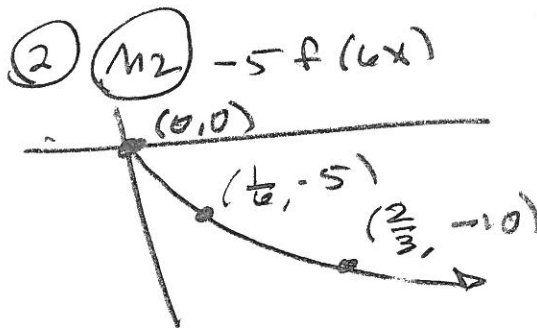
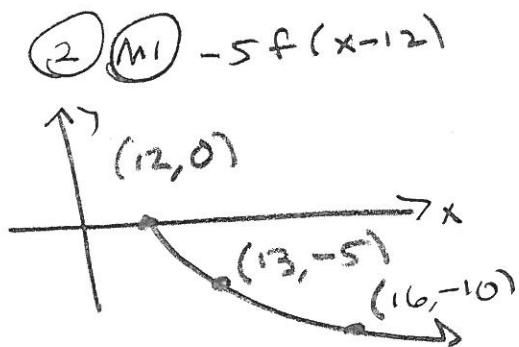
(4)



(4) $g(x) = -5\sqrt{6x-12} + 13 = -5\sqrt{6(x-2)} + 13$

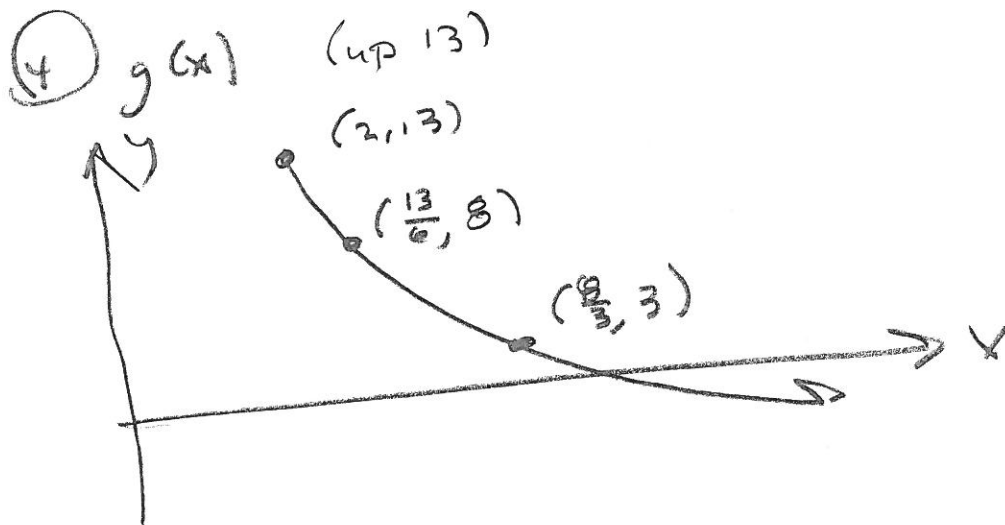


$\frac{1}{6} = \frac{2}{3}$



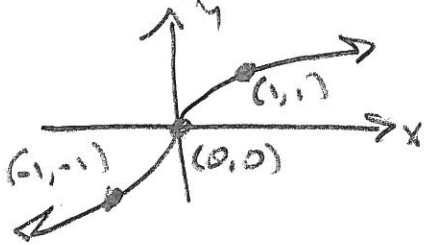
$M_1 \frac{12}{6} = 2, \frac{13}{6}, \frac{16}{6} = \frac{10}{3}$

$M_2 0+2=2, \frac{1}{6}+2 = \frac{13}{6}, \frac{2}{3}+2 = \frac{10}{3}$

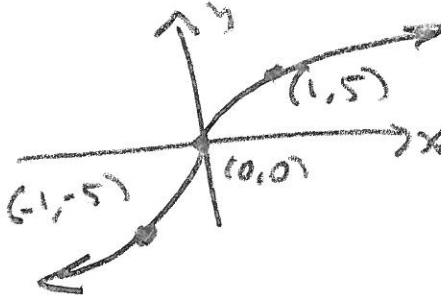


5) $g(x) = 5 \sqrt[3]{3x-18} + 11 = 5 \sqrt[3]{3(x-6)} + 11$
m1 m2

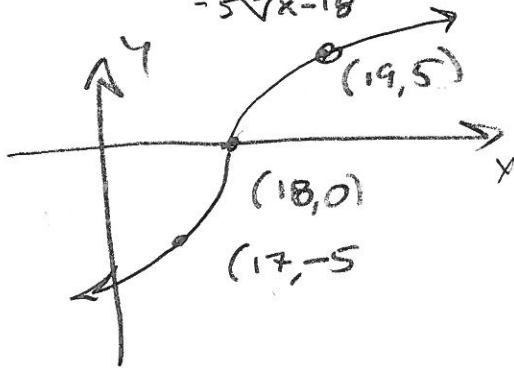
0) $f(x) = \sqrt[3]{x}$



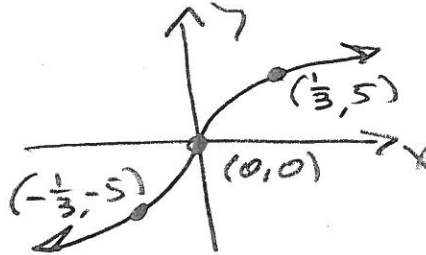
1) $5f(x) = 5\sqrt[3]{x}$



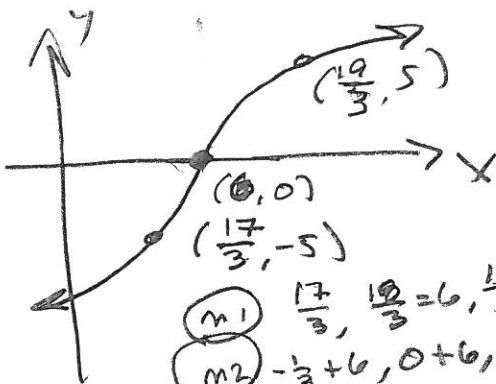
2) $m1$ $5f(x-18) = 5\sqrt[3]{x-18}$



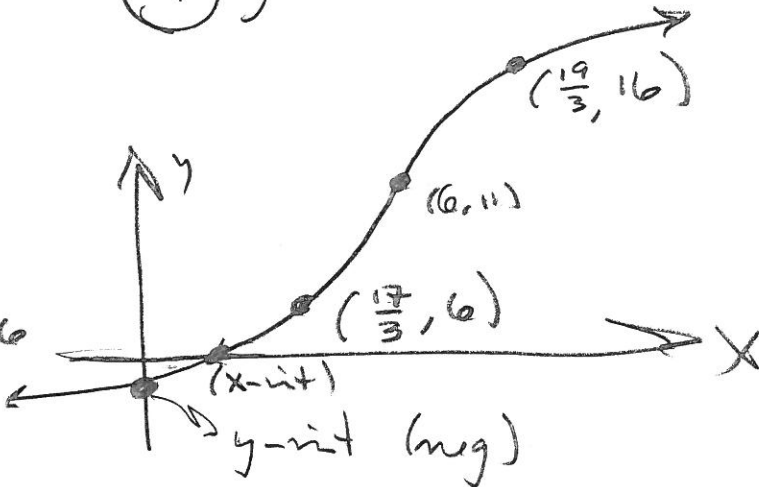
2) $m2$ $5f(3x) = 5\sqrt[3]{3x}$



3) $5f(3x-18) = 5f(3(x-3)) = 5\sqrt[3]{3(x-6)}$
 $= 5\sqrt[3]{3x-18}$



4) $g(x)$



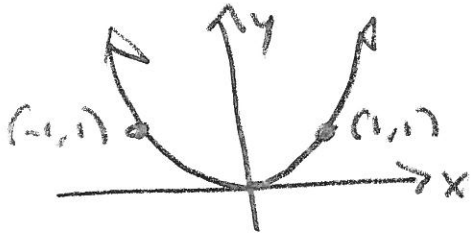
$m1$ $\frac{17}{3}, \frac{19}{3} = 6, \frac{19}{3}$
 $m2$ $-\frac{1}{3} + 6, 0 + 6, \frac{1}{3} + 6$
 $g(0) = 5\sqrt[3]{-18} + 11 \approx -21$

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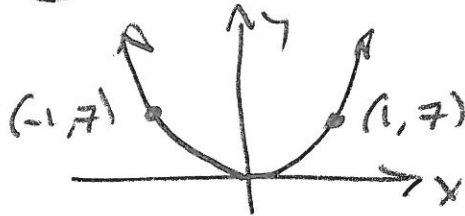
WP #2

$$(6) \quad g(x) = 7(5x+30)^4 + 8$$

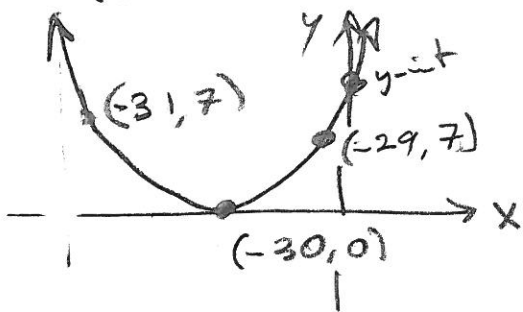
$$(0) \quad f(x) = x^4$$



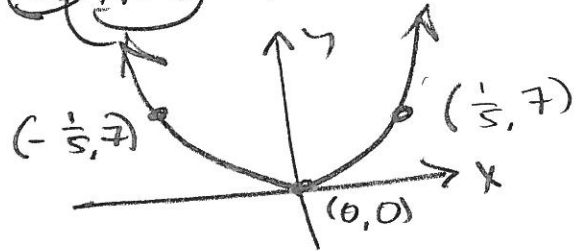
$$(1) \quad 7f(x) = 7x^4$$



$$(2) \quad M1 \quad 7f(x+30) = 7(x+30)^4$$

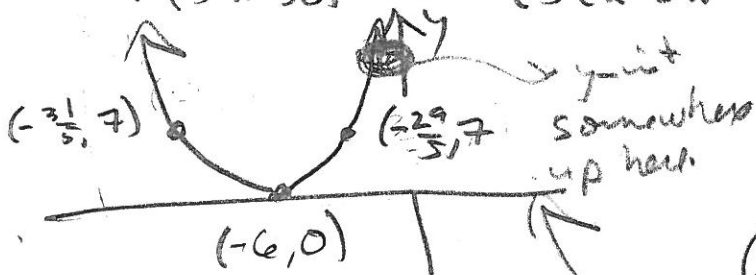


$$(2) \quad M2 \quad 7f(5x) = 7(5x)^4$$



$$(3) \quad 7f(5x+30) = 7f(5(x+6))$$

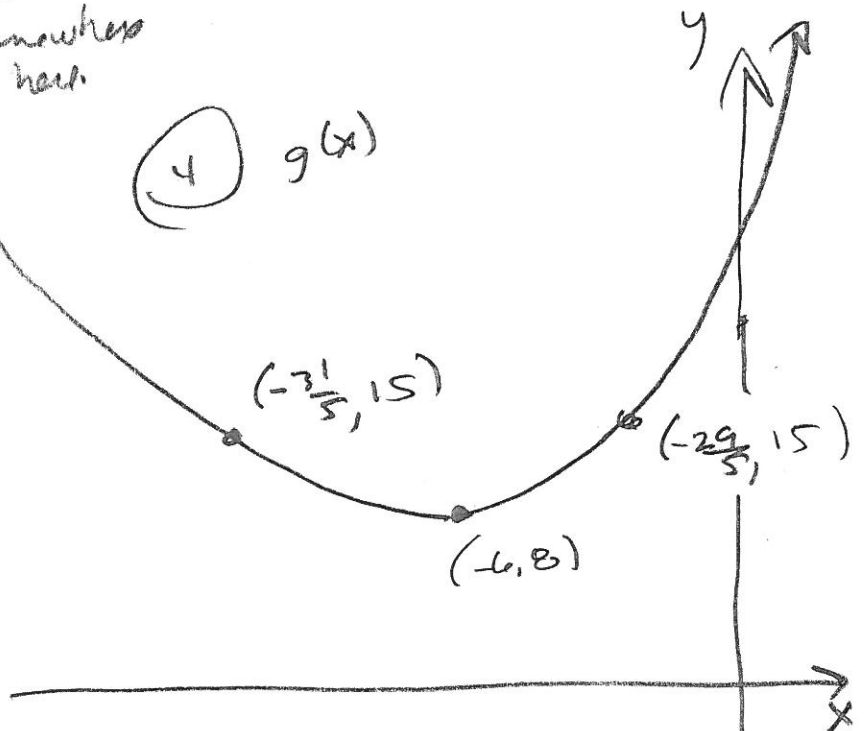
$$7(5x+30)^4 = 7(5(x+6))^4$$



$$M1 \quad -\frac{31}{5}, -\frac{30}{5} = -6, -\frac{29}{5}$$

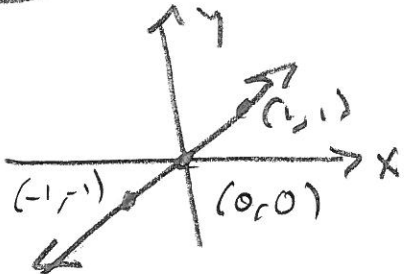
$$M2 \quad -\frac{1}{5} - 6, 0 - 6, \frac{1}{5} - 6$$

$$(4) \quad g(x)$$

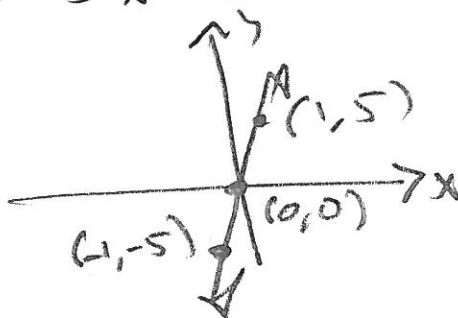


(7) $g(x) = 5(x-3) + 5$

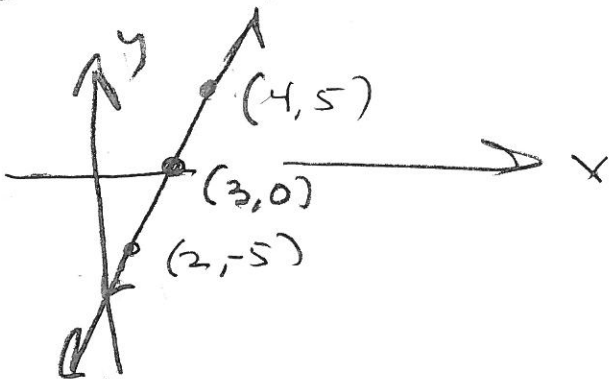
(0) $f(x) = x$



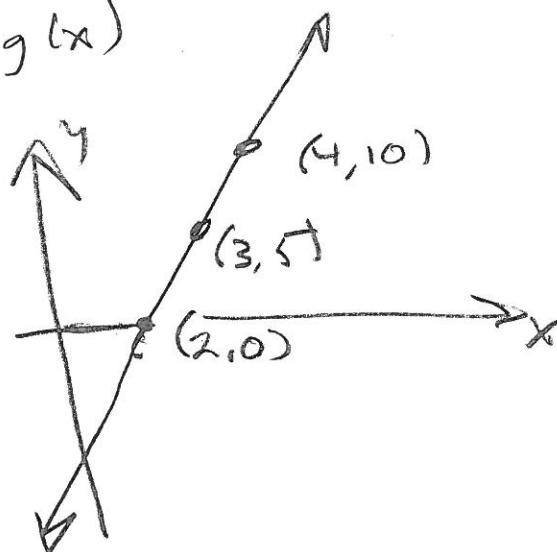
(1) $5x = 5f(x)$



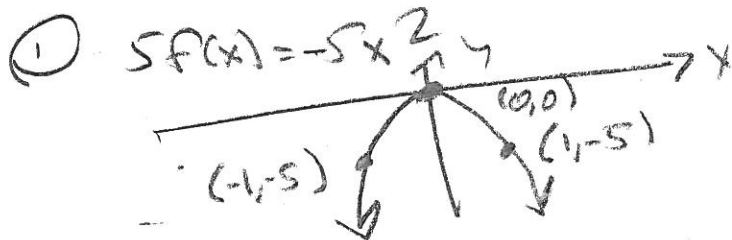
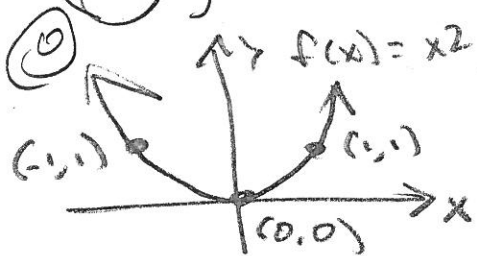
(2) $5(x-3) = 5f(x-3)$



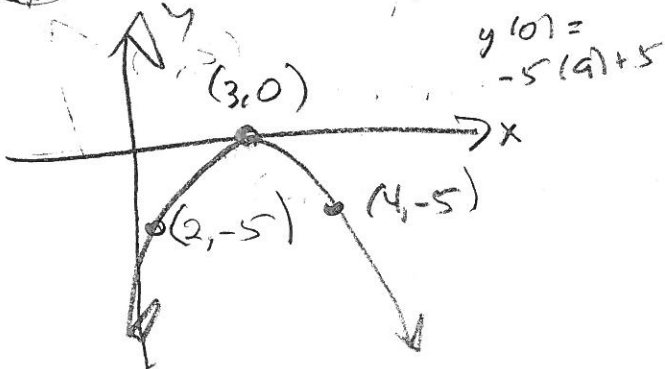
(3) $g(x)$



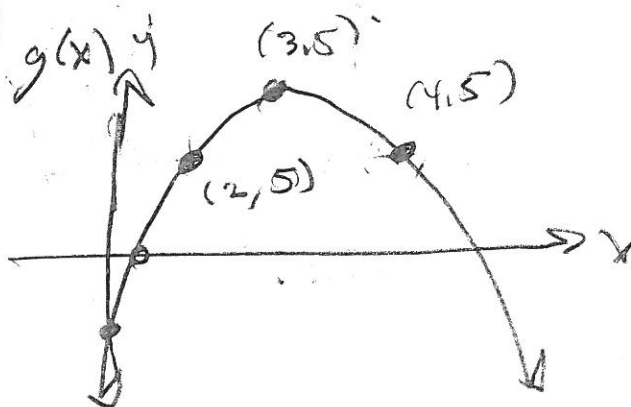
(8) $g(x) = -5(x-3)^2 + 5$



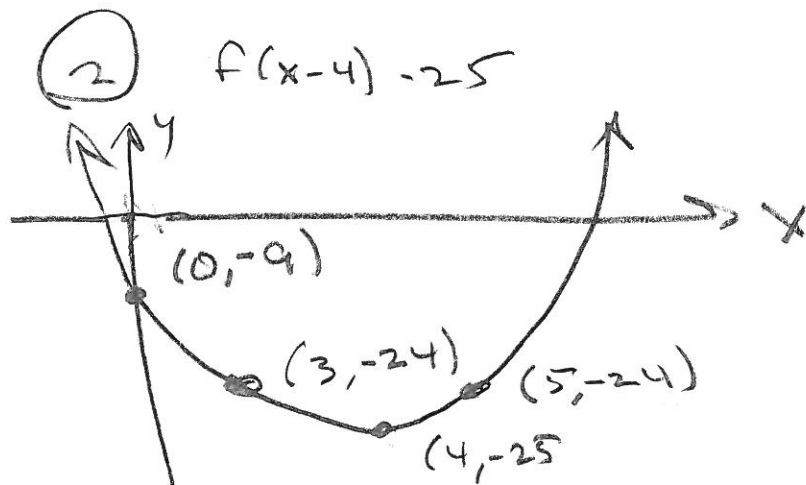
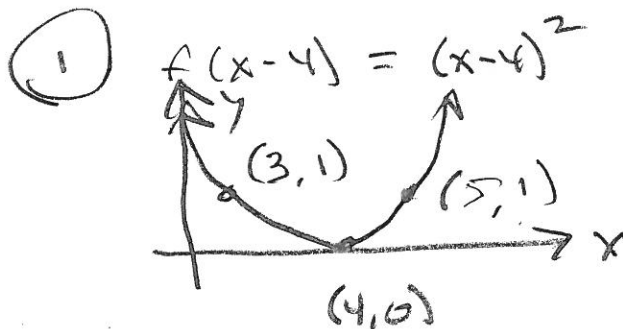
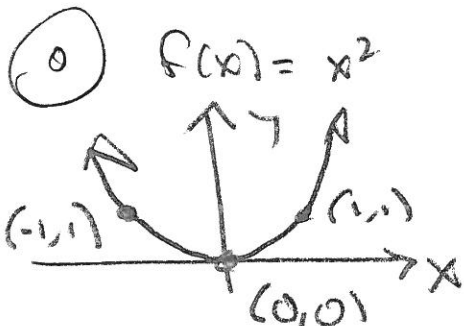
(2) $-5(x-3)^2 = -5f(x-3)$



(3) $g(x)$



(9) $g(x) = x^2 - 8x - 9 = x^2 - 8x + 4^2 - 16 - 9 = (x-4)^2 - 25$

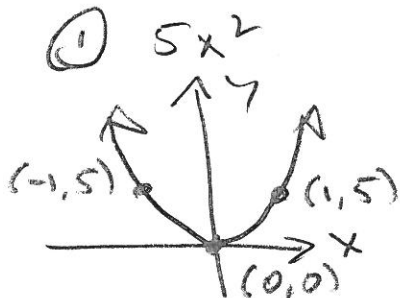


(10) $5x^2 + 4x + 17 = g(x) = 5\left(x^2 + \frac{4}{5}x + \left(\frac{2}{5}\right)^2\right) + 17 - 5\left(\frac{4}{25}\right)$

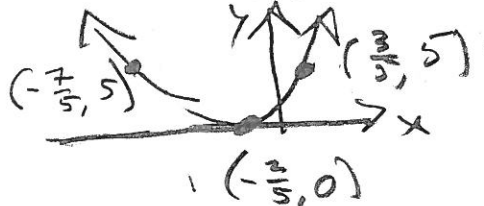
(0) See above

$$= 5\left(x + \frac{2}{5}\right)^2 + \frac{81}{5}$$

$$\frac{(17)(5) - 4}{5} = \frac{85 - 4}{5} = \frac{81}{5}$$



(2) $5\left(x + \frac{2}{5}\right)^2 = 5f\left(x + \frac{2}{5}\right)$



(3) $g(x) = 5\left(x + \frac{2}{5}\right)^2 + \frac{81}{5}$

$$5 + \frac{81}{5} = \frac{25 + 81}{5} = \frac{106}{5}$$

