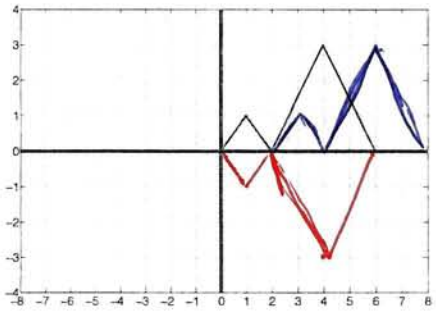
MATH 161
Review problem

Name : SOLUTIONS

October 12, 2012

1. On a separate sheet of paper, use Pascal's triangle to expand $(2t-3)^4$.

2. Below is the graph of $y = f(x)$. Plot (a) $f(x-2)$, (b) $-f(x)$, (c) $-f(-x+1)$, (d) $|f(x)-1|$



a. Horizontal Translation 2 units RIGHT BLUE

b. x-axis reflection RED

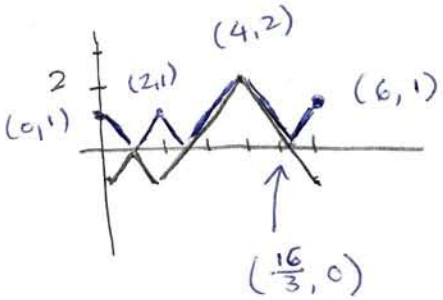
c. Horizontal Translation 1 unit LEFT

x- and y-axis reflections

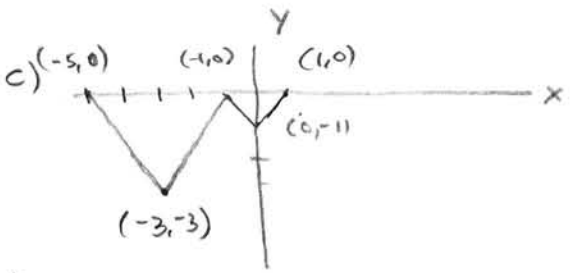
d. Vertical Translation 1 unit down (pencil)

Then absolute value BLUE

d.



c)



(e) Compute $f(f(4))$. $f(4) = 3$ so $f(3) = f(f(4)) = \frac{3}{2}$

(f) Give a piecewise formula for $f(x)$.

$$f(x) = \begin{cases} x, & \text{if } 0 \le x < 1 \\ 2-x, & \text{if } 1 \le x < 2 \\ \frac{3}{2}x - 3, & \text{if } 2 \le x < 4 \\ -\frac{3}{2}x + 9, & \text{if } x \ge 4 \end{cases}$$