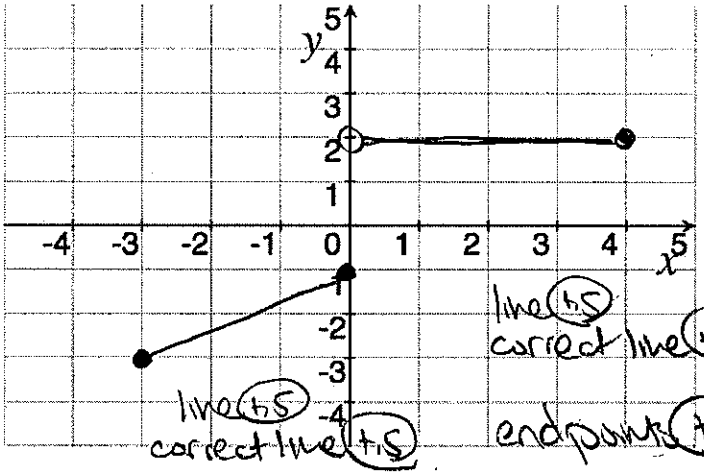
Quiz 2

Key

Show *all* your work. No credit is given without reasonable supporting work. There are *two* sides to this quiz.

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



line (+.5) correct line (+.5)

line (+.5) correct line (+.5)

endpoints (+1)

(a) [1] (TransformingWks #1) Find $f(-3)$.

use 1st line (+.5)

$\frac{2}{3}(-3) - 1$

$-2 - 1 = -3$ (+.5)

(b) [1] (§1.6 #38) $(f \circ f)(-3) = f(f(-3)) = f\left(\frac{2}{3}(-3) - 1\right)$

composition (+.5)

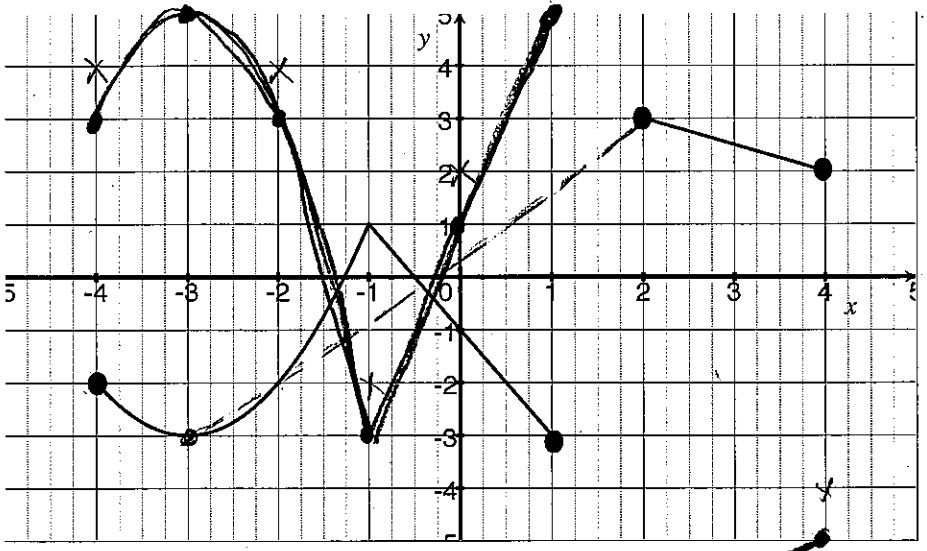
or $= f(-3) = \frac{2}{3}(-3) - 1 = -3$ (+.5)

$-3 \xrightarrow{f} \frac{2}{3}(-3) - 1 \xrightarrow{f} \frac{2}{3}(-3) - 1$

-3 -3

(c) [3] (WebHW2 #10) Graph the function f

2. Let g be the piecewise defined graph shown below.



(a) [2] (WebHW2 #14) Find the average rate of change of g from -3 to 2.

ie. slope of dotted line above

$\frac{\text{rise}}{\text{run}} = \frac{6}{5}$ (+.5) or $\frac{g(2)-g(-3)}{2+3} = \frac{6}{5}$ (+.5)

Notation (+.5)

(b) [3] (§1.5 #86) Graph $-2g(x) - 1$

X vertical stretch by negative two (+.5)

vertical shift down 1 (+.5)

do vertical stretch first (+.5)

did it (+1.5)