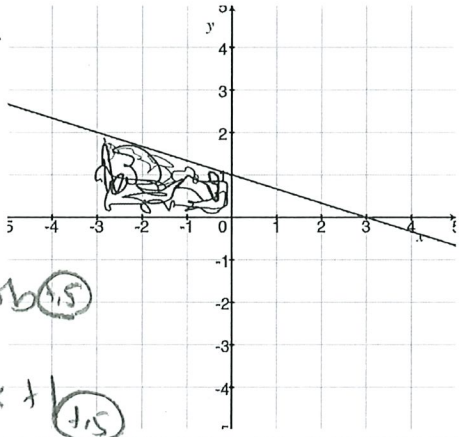
Key

Quiz 1

This is a two-stage quiz. During the first stage, use your knowledge & calculator. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have the remainder of the quiz time to write one solution (with everyone's name on it!!!) to be turned in for the group.

Show *all* your work. Reasonable supporting work must be shown for any partial credit.

1. [3] Describe the shaded area below as a definite integral. Make sure you write it in such a way that technology could finish the problem for you.



Activity #2

$\int_{-3}^{0} f(x)\,dx$

notation +1.5

-3 (+1.5)

use int +1.5

$\int_{-3}^{0} -\frac{1}{3}x+1\,dx$

we need a formula for $f(x)$...

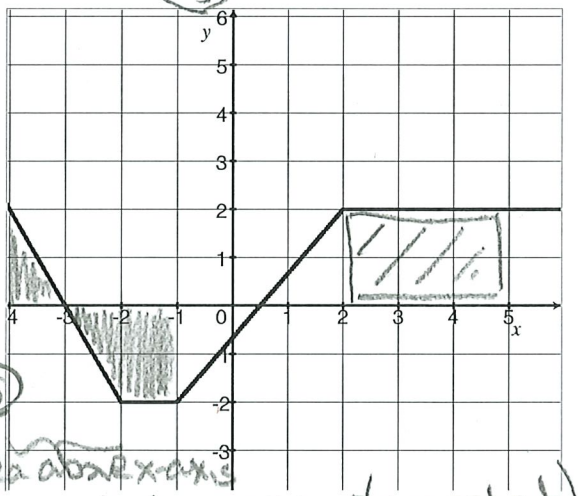
Looking for a line: $y=mx+b$ (+1.5)

$m=\frac{\text{rise}}{\text{run}}=\frac{-1}{3}$ (+1)

$b=y$-intercept

$y=-\frac{1}{3}x+1$ (+1.5)

2. The graph of f is shown on the right.



§5.2 #60 webwk 5.2 #1

(a) [2] Find $\int_{2}^{5} f(x)\,dx$ (+1)

notation +1.5

3 | 2

Area trapped $= 3 \cdot 2 = 6$ (+1.5)

(b) [2] Find $\int_{-4}^{-1} f(x)\,dx$

$= \boxed{}\,|\,-2 = -2$

area shaded +1.5

negative area +1.5

(+1) area above x-axis = area below x-axis $\Rightarrow$ (cancel out)

(c) [3] Given that $\int_{2}^{5} g(x)\,dx = 3$, find $\int_{2}^{5} f(x)+2g(x)\,dx$

$\int_{2}^{5} f(x)+2g(x)\,dx = \int_{2}^{5} f(x)\,dx + 2\int_{2}^{5} g(x)\,dx$ (+1)

notation +1.5

$= \underbrace{6}_{\text{(part a)}} + 2\cdot\underbrace{3}_{\text{given}}$ (+1)

$= 6+6 = 12$ (+1.5)