Side Note:

A.) Find the area under the curve $f(x) = 2$, above the x-axis, and between $x = 0$ and $x = 5$.

B.) Find the area under the curve $h(x) = \begin{cases} 2 & x \neq 1, 2, 3, 4 \\ 0 & x = 1, 2, 3, 4 \end{cases}$, above the x-axis, and between $x = 0$ and $x = 5$.

C.) Find the area under the curve $h(x) = \begin{cases} 2 & x \text{ irrational} \\ 0 & x \text{ rational} \end{cases}$, above the x-axis, and between $x = 0$ and $x = 5$.

D.) Find the area under the curve $h(x) = \begin{cases} 2 & x \text{ rational} \\ 0 & x \text{ irrational} \end{cases}$, above the x-axis, and between $x = 0$ and $x = 5$.

$\frac{1}{1}, \frac{1}{2}, \frac{2}{1}, \frac{1}{3}, \frac{3}{1}, \frac{1}{4}, \frac{2}{3}, \frac{3}{2}, \frac{4}{1}, \cdots$

HW 12
5.1) 17, 19, 21, 22
5.2) 18, 21, 23, 24, 30, 34, 35, 38, 39, 49, 50, 53
5.3) 3, 7-10, 13-16,19, 37, 38, 61, 62

Real notes:

1.) Find the area between the curve $f(x) = \begin{cases} 2 & x < 0 \\ -3 & x > 0 \end{cases}$, and the x-axis, and between $x = -4$ and $x = 5$.

2a.) $\int_{-4}^{5} |f(x)|dx =$

2b.) $\int_{-4}^{5} f(x)dx =$

3.) The speed of a runner decreased steadily after crossing the finish line. Her speed at 2 second intervals is given in the table. Find lower and upper estimates for the distance that she traveled during these 6 seconds.

$t(seconds)$	0	2	4	6
$v(feet/sec)$	40	20	5	0

Lower estimate: _____, Upper estimate: _____