Pg 195 Evens

(2) Increasing $(-\infty, -1)$ decreasing $(-1, \infty)$

(4) Increasing $(-1, \infty)$

(6) Increasing $(-3, 2)$

(8) constant $(-\infty, 0)$ increasing $(0, \infty)$

(10) increasing $(-5, -4) \cup (-2, 0) \cup (2, 4)$
decreasing $(-4, -2) \cup (0, 2) \cup (4, 5)$

(12) constant $(-\infty, -4) \cup (2, \infty)$
decreasing $(-4, 2)$

(14) Relative max $(0, 2)$; Relative min $(-3, -1)$ and $(3, -1)$

(16)

(34) odd function

(36) Neither

(50) a. Domain: $(-\infty, \infty)$

b. Range: $(-\infty, 4]$

c. x-ints: $(-4,0)$ $(4,0)$

d. y-ints: $(0,1)$

e. increasing intervals: $(-\infty,-2) \cup (0,3)$

f. decreasing intervals: $(-2,0) \cup (3,\infty)$

g. values where $f(x) \leq 0$: $(-\infty,-4] \cup [4,\infty)$

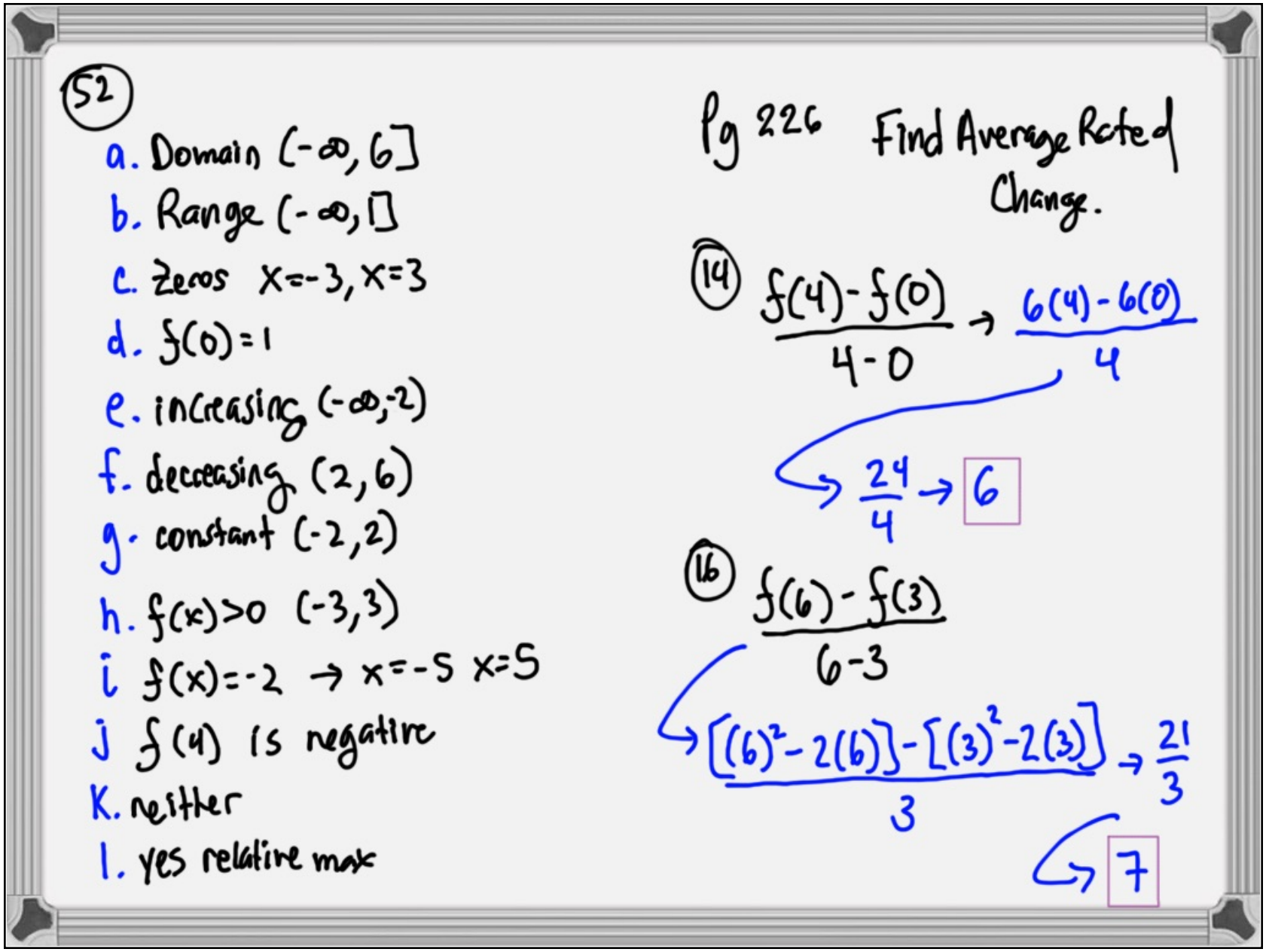
h. the values (x) for which f has a relative max: $x=-2$ and $x=3$

i. the relative maxima of $f(x)$: $(-2,4)$ and $(3,2)$

j. $f(-2)=4$

K. values of x for which $f(x)=0$: $x=-4$ & $x=4$

l. neither


52
a. Domain $(-\infty, 6]$
b. Range $(-\infty, 1]$
c. Zeros $x=-3, x=3$
d. $f(0)=1$
e. increasing $(-\infty, -2)$
f. decreasing $(2, 6)$
g. constant $(-2, 2)$
h. $f(x)>0$ $(-3, 3)$
i $f(x)=-2 \rightarrow x=-5$ $x=5$
j $f(4)$ is negative
K. neither
l. yes relative max
Pg 226 Find Average Rated Change.
14 $\frac{f(4)-f(0)}{4-0} \rightarrow \frac{6(4)-6(0)}{4}$
$\frac{24}{4} \rightarrow 6$
16 $\frac{f(6)-f(3)}{6-3}$
$\frac{[(6)^2-2(6)]-[(3)^2-2(3)]}{3} \rightarrow \frac{21}{3}$
7

(18) $\frac{f(16)-f(9)}{16-9} \rightarrow \frac{\sqrt{16}-\sqrt{9}}{7} \rightarrow \boxed{\frac{1}{7}}$

(20) $s(t)=12t^2$

a. $\frac{s(4)-s(3)}{4-3}$

$\frac{12(4)^2-12(3)^2}{4-3} = \boxed{84 \text{ ft/sec}}$

b. $\frac{s(3.5)-s(3)}{3.5-3}$

$\frac{12(3.5)^2-3(3)^2}{3.5-3} = \boxed{78 \text{ ft/sec}}$

c. $\frac{s(3.01)-s(3)}{3.01-3}$

$\frac{12(3.01)^2-12(3)^2}{3.01-3} = \boxed{72.12 \text{ ft/sec}}$

d. $\frac{s(3.001)-s(3)}{3.001-3}$

$\frac{12(3.001)^2-12(3)^2}{3.001-3} = \boxed{72.012 \text{ ft/sec}}$

(32)

(to nearest whole #)

$\frac{623-1273}{2006-2001} = -130$

↳ which means a decrease in 130 discharges per year

$\frac{f(12)-f(7)}{12-7} = -96.3$

↳ a decrease in 96.3 discharges per year.