ch. 8 non-calc

#7,

	1	2	3	4	5	6
	26	10	20	4	29	11
TC	26	36	56	60	89	100

(a) median $= \frac{100+1}{2} = 50.5$

$\left.\begin{array}{l} 50^{th} \text{ data value} : 3 \\ 51^{st} \text{ data value} : 3 \end{array}\right\rangle 3$

b) Q1 $\frac{50+1}{2} = 25.5$ $\left.\begin{array}{l} 25^{th} : 1 \\ 26^{th} : 1 \end{array}\right\rangle 1$

Q3 : 75.5 $\left.\begin{array}{l} 75^{th} : 5 \\ 76^{th} : 5 \end{array}\right\rangle 5$

IQR $= 5 - 1 = 4$

#7½

1	2	3	4	5	6
25	10				

Q1 : 1½

Special Assignment

By Monday 11/13/2017, Read chapter 16 in the textbook: The Exploration

Calculus:

Consider $f(x) = \dfrac{x-1}{x^2-1}$

what happens when we plug in numbers close to 1.

approaching from the right ↓

x	$f(x)$
1.1	0.4762
1.01	0.4975
1.001	0.4998
1.0001	0.49998

x	$f(x)$
0.9	0.5269
0.99	0.5025
0.999	0.5003
0.9999	0.50003

limit value

$\lim_{x \to 1^+} f(x) = 0.5$

right-hand limit

$\lim_{x \to 1^-} f(x) = 0.5$

left-hand limit

2-sided limit:

$$\lim_{x \to 1} f(x) = 0.5$$

Without a calculator:

$$\lim_{x \to 1} \frac{x-1}{x^2-1} = \lim_{x \to 1} \frac{x-1}{(x-1)(x+1)}$$

$$= \lim_{x \to 1} \frac{1}{x+1} = \frac{1}{1+1} = \frac{1}{2}$$

Ex. $\lim_{x \to -3} \frac{x^2+4x+3}{x^2+5x+6}$

$$= \lim_{x \to -3} \frac{(x+1)(x+3)}{(x+2)(x+3)} = \frac{-3+1}{-3+2}$$

$$= \frac{-2}{-1} = 2$$