

Num calc #5

$$\left\{ \frac{46 + 92 + a + a + a + a}{6} = 71 \right.$$

$$138 + 4a = \overset{3}{4} \overset{11}{2} 6 \leftarrow (a)$$

$$4a = \underline{288}$$

$$a = 72 \leftarrow (b)$$

$$(c) 71 - 9 = 62$$

#7,

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

Median is at $\frac{100+1}{2} = 50.5$

$$\begin{array}{l} 50^{\text{th}} \\ 51^{\text{st}} \end{array} \begin{array}{l} 3 \\ 3 \end{array} > 3 = \text{median}$$

$$Q_1 \text{ is at } \frac{50+1}{2} = \underline{25.5} \quad \begin{array}{l} 25^{\text{th}} \\ 26^{\text{th}} \end{array} \begin{array}{l} 1 \\ 1 \end{array} > 1 = Q_1$$

$$Q_3 \text{ is at } 75.5 \quad \begin{array}{l} 75^{\text{th}} \\ 76^{\text{th}} \end{array} \begin{array}{l} 5 \\ 5 \end{array} > 5 = Q_3$$

$$IQR = 5 - 1 = 4$$

#7 $\frac{1}{2}$

	1	2	3	4	5	6
freq	25	11	20	4	29	11

Find the IQR

$$Q_1 \text{ at } \frac{50+1}{2} = 25.5 \begin{cases} 25^{\text{th}} & 1 \\ 26^{\text{th}} & 2 \end{cases}$$

$$\begin{aligned} Q_1 &= 1.5 \\ Q_3 &= 5 \end{aligned} \quad \left. \vphantom{\begin{aligned} Q_1 \\ Q_3 \end{aligned}} \right\} \text{IQR} = 5 - 1.5 = \underline{\underline{3.5}}$$

#4. Median

$$\text{Type A} + \text{Type B} \quad \underline{\underline{52}}$$

Range

$$\text{Type A} : 60 - 46 = 14$$

$$\text{Type B} : 57 - 49 = 8$$

86 #7

$$Q_1 \quad \frac{220}{4} \approx 55^{\text{th}}$$

164
cm

$$Q_3 \quad 3(55) = 165^{\text{th}}$$

173 cm

CALCULUS

Limits

Consider the function $f(x) = \frac{x-1}{x^2-1}$.

What happens to $f(x)$ as x gets close to 1?

approaching
1 from the right

x	$f(x)$
1.1	0.47619
1.01	0.49751
1.001	0.49975
1.0001	0.49998

Right-hand limit

$$\lim_{x \rightarrow 1^+} f(x) = \frac{1}{2}$$

x	$f(x)$
0.9	0.52632
0.99	0.50251
0.999	0.50025
0.9999	0.50003

Left-hand limit

$$\lim_{x \rightarrow 1^-} f(x) = \frac{1}{2}$$

2-sided
limit

$$\lim_{x \rightarrow 1} f(x) = \frac{1}{2}$$