

FIND: STRESS RANGE, ALT STRESS, MEAN STRESS
STRESS RATIO & AMPLITUDE RATIO.

FROM pg 357, EQ 6-1a THRU 6-1d [SEE ALSO FIG 6-6, pg 356]

$$\text{STRESS RANGE} = \Delta\sigma = \sigma_{\max} - \sigma_{\min} \quad 6-1a$$

$$\text{ALT STRESS} = \sigma_a = \frac{\sigma_{\max} - \sigma_{\min}}{2} \quad 6-1b$$

$$\text{MEAN STRESS} = \sigma_m = \frac{\sigma_{\max} + \sigma_{\min}}{2} \quad 6-1c$$

$$\text{STRESS RATIO} = R = \frac{\sigma_{\min}}{\sigma_{\max}}$$

$$\text{AMPLITUDE RATIO} = \frac{\sigma_a}{\sigma_m}$$

} 6-1d

TABLE PG-1 PLUS

Row	$\sigma_{\max}$	$\sigma_{\min}$	$\Delta\sigma$	σ_a	σ_m	R	A
a	1,000	0	1,000	500	500	0	1
b	1,000	-1,000	2,000	1,000	0	-1	N/A
c	1,500	500	1,000	500	1,000	$\frac{1}{3}$	$\frac{1}{2}$
d	1,500	-500	2,000	1,000	500	$-\frac{1}{3}$	2
e	500	-1,000	1,500	750	-250	-2	-3
f	2,500	-1,200	3,700	1,850	650	-0.48	2.84
g	0	-4,500	4,500	2,250	-2,250	N/A	-1
h	2,500	1,500	1,000	500	2,000	$\frac{3}{5}$	$\frac{1}{4}$