

4-13 - Already assigned & graded see 6/13/02

4-14 Note 5 different ore samples see p80-case 3

Sample	Method 1	Method 2	$d_i$	$d_i - \bar{d}$	$(d_i - \bar{d})^2$
A	0.0134	0.0135	-0.0001	+0.0006	3.6
B	0.0144	0.0156	-0.0012	-0.0005	2.5
C	0.0126	0.0137	-0.0011	-0.0004	1.6
D	0.0125	0.0137	-0.0012	-0.0005	2.5
E	0.0137	0.0136	+0.0001	+0.0008	6.4
					$\bar{d} = -0.00070$
					$16.6 \times 10^{-9}$

$$s_d = \sqrt{\frac{\sum (d_i - \bar{d})^2}{n-1}} = \sqrt{\frac{16.6 \times 10^{-9}}{4}} = 6.4 \times 10^{-4}$$

$$t_{calc} = \frac{\bar{d}}{s_d} \sqrt{n} = \frac{7.0 \times 10^{-4}}{6.4 \times 10^{-4}} \sqrt{5} = 2.45 < 2.776$$

methods are equal 95% confidence  $f=4$

4-17  $\bar{x}_1 = 31.4$   $s_1 = 30.0$   $n = 32$   
 $\bar{x}_2 = 52.9$   $s_2 = 29.8$   $n = 32$  } See P 79 Case 2.

$$s_{pooled} = \sqrt{\frac{31(30.0)^2 + 31(29.8)^2}{62}} = 29.9$$

$$t_{calc} = \frac{\bar{x}_1 - \bar{x}_2}{s_{pooled}} \sqrt{\frac{n_1 n_2}{n_1 + n_2}} = \frac{|31.4 - 52.9|}{29.9} \sqrt{\frac{(32)^2}{64}} = 2.92$$

@ 95%  $t_{60} = 2.00$  so tunnel is diff  
 @ 99%  $t_{60} = 2.66$  " " " " @ 99.9%  $t = 3.46$   
 - I'm only 99.5% certain.

5-1 USE CALCULATOR or SPREADSHEET!

But wait! They give the answer!

$$m = -1.29972 \times 10^4 \pm 13.190 = -1.299 (\pm 0.001) \times 10^4$$

$$b = 256.695 \pm 323.57 = 3 (\pm 3) \times 10^2$$

see page 97 top of page

7 pts