Quick Questions 16   Small Sample Hypothesis Testing Using Student's t Test

I. Place the number of the appropriate definition or formula next to the concept it defines.

A. Weighted or pooled estimate of the population variance_____

B. Standard deviation of the differences _____

C. t when comparing two dependent populations _____

D. t when comparing two independent populations _____

E. Used with one population _____

F. Requires the use of the t distribution _____

1.	4.
$$\dfrac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}$$	$$\sqrt{\dfrac{\sum d^2 - \dfrac{(\sum d)^2}{n}}{n-1}}$$
2. $$\dfrac{x_1-x_2}{\sqrt{s_w^2(\frac{1}{n_1}+\frac{1}{n_2})}}$$	5. $$\dfrac{\bar{d}}{\frac{s_d}{\sqrt{n}}}$$
3. the population is approx- imately normal, n $\le$ 30, and the population variance isn't known	6. $$\dfrac{\bar{x}-\mu}{\frac{s}{\sqrt{n}}}$$

II. Linda is tracking the number of work days missed by employees before and after taking part in a company-sponsored lunchtime physical fitness program. Test at the .01 level of significance whether the average number of days missed went down for program participants.

Employee	A	B	C	D	E	F	G
Before	8	9	6	8	3	4	5
After	6	7	5	6	5	2	5

III. Eight men applying to State University had a sample mean and variance on college board tests of 1,050 and 2,500 respectively. The respective numbers for nine women were 1,075 and 3,600. Test at the .05 level of significance whether women did better than men on these tests.

For People Using Statistics Software	
Men	Women
1,041	1,001
1,100	1,114
1,025	1,081
1,114	1,080
1,060	1,140
950	955
1,060	1,125
1,050	1,079
	1,100