Complete the 4 blanks in the following table.

Expected frequencies are computed from the normal distribution.

Age of mothers of students taking Biol 4605 and 7220 in 2000

| | Obs | | | Expected | Obs-Exp | Cumulative |
|-----------|-------------------------------------------------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Age | Freq | Sum(Age) | Sum(Age*Age) | Freq | | Frequency |
| Х | F(Age=x) | | | 42*Pr(Age=x) | | F(Age <u><</u> x) |
| 18 | 2 | 36 | 648 | 3.20 | -1.20 | 2 |
| 23 | 17 | 391 | 8993 | 11.80 | 5.20 | 19 |
| | | 308 | 8624 | 16.36 | | |
| 33 | 10 | 330 | 10890 | 8.51 | 1.49 | 40 |
| 38 | 2 | 76 | 2888 | 1.66 | 0.34 | 42 |
| 43 | 0 | 0 | 0 | 0.12 | -0.12 | 42 |
| Cum | 42 | 1111 | 22042 | 41.66 | 0.24 | |
| Sum | 42 | 1141 | 32043 | 41.00 | 0.34 | |
| mean(Age) | | 27.1667 | | | | |
| | | | | | | |
| var(Age | e) | | 25.5081 | | | |
| stdev(A | ge) | | 5.0506 | | | |
| | x 18 23 33 38 43 Sum mean(A var(Age | Age Freq x F(Age=x) 18 2 23 17 | Age Freq Sum(Age) x F(Age=x) 18 2 36 23 17 391 308 308 330 38 2 76 43 0 0 Sum 42 1141 mean(Age) 27.1667 var(Age) | Age Freq x Sum(Age) Sum(Age*Age) x F(Age=x) 36 648 18 2 36 648 23 17 391 8993 308 8624 33 10 330 10890 38 2 76 2888 43 0 0 0 Sum 42 1141 32043 mean(Age) 27.1667 var(Age) 25.5081 | Age Freq x Sum(Age) Sum(Age*Age) Freq 42*Pr(Age=x) 18 2 36 648 3.20 23 17 391 8993 11.80 33 10 330 10890 8.51 38 2 76 2888 1.66 43 0 0 0 0.12 Sum 42 1141 32043 41.66 mean(Age) 27.1667 25.5081 | Age Freq x Sum(Age) Sum(Age*Age) Freq 42*Pr(Age=x) 18 2 36 648 3.20 -1.20 23 17 391 8993 11.80 5.20 33 10 330 10890 8.51 1.49 38 2 76 2888 1.66 0.34 43 0 0 0 0.12 -0.12 Sum 42 1141 32043 41.66 0.34 mean(Age) 27.1667 var(Age) 25.5081 |

(2) The variance in age is 25.51 yr². How would you compute the standard deviation from this variance?

(3) Mean(age(1997)) =
$$27.8$$
 years
Mean(age(2000)) = 27.2 years

Write a null / alternative hypothesis pair to test whether age of students in 1997 differs from 2000.

(4) Write a data equation for F(Age=33), for which the frequency is 10.

_____= ____+ _____