Unit #1 PW: Mean, Var, SD of Prob Distr.

①

x	0	1	2	3
$P(x)$	.92	.03	.03	.02

$\mu = E(X) = 0(.92) + 1(.03) + 2(.03) + 3(.02)$
$= \boxed{.15}$

$\sigma^2 = (0-.15)^2(.92) + (1-.15)^2(.03) + (2-.15)^2(.03) + (3-.15)^2(.02)$
$= \boxed{.3075}$

$\sigma = \sqrt{.3075} = \boxed{.5575}$

10 days $\rightarrow$ $10(.15) = \boxed{1.5}$

② $\mu = E(X) = 19(.2) + 20(.2) + 21(.3) + 22(.2) + 23(.1)$
$= \boxed{20.8}$

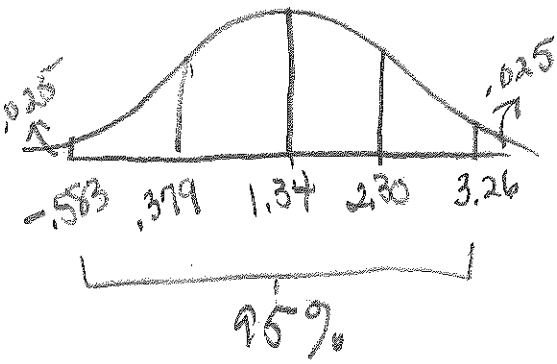
$\sigma^2 = (19-20.8)^2(.2) + (20-20.8)^2(.2) + \ldots + (23-20.8)^2(.1)$
$= \boxed{1.559}$

$\sigma = \sqrt{1.559} = \boxed{1.249}$ 5 days $\rightarrow$ $5(20.8) = \boxed{104}$

③ $\mu = E(X) = 0(.18) + 1(.44) + 2(.27) + 3(.08) + 4(.03) = \boxed{1.34}$

$\sigma^2 = (0-1.34)^2(.18) + (1-1.34)^2(.44) + \ldots + (4-1.34)^2(.03) = \boxed{.9244}$

$\sigma = \sqrt{.9244} = \boxed{.9615}$



Recall!

Approximately 2.5% have at least 3.26 credit cards, so the bank vice president is correct.

④ $\mu = E(x) = 0(.1) + 1(.2) + 2(.3) + 3(.2) + 4(.2) = \boxed{2.2}$

$\sigma^2 = (0-2.2)^2(.1) + (1-2.2)^2(.2) + \ldots + (4-2.2)^2(.2)$

$= \boxed{1.56}$

$\sigma = \sqrt{1.56} = \boxed{1.25}$

⑤ $\mu = E(x) = 0(.06) + 1(.42) + 2(.22) + 3(.12) + 4(.15)$

$+5(.03) = 1.97$ $\boxed{\$197}$

$\sigma^2 = (0-1.97)^2(.06) + (1-1.97)^2(.42) + \ldots + (5-1.97)^2(.03)$

$= 1.6384$ $\boxed{\$164}$

$\sigma = \sqrt{1.6384} = 1.28$ $\boxed{\$128}$

⑥ $\mu = E(x) = 2(.3) + 3(.4) + 4(.2) + 5(.1) = \boxed{3.1}$

$\sigma^2 = (2-3.1)^2(.3) + (3-3.1)^2(.4) + \ldots + (5-3.1)^2(.1) = \boxed{.89}$

$\sigma = \sqrt{.89} = \boxed{.9434}$

⑦ $\mu = E(x) = 5(.2) + 6(.25) + 7(.38) + 8(.1) + 9(.07) = \boxed{6.59}$

$\sigma^2 = (5-6.59)^2(.2) + (6-6.59)^2(.25) + \ldots + (9-6.59)^2(.07)$

$= \boxed{1.2618}$

$\sigma = \sqrt{1.2618} = \boxed{1.123}$

⑧ $\mu = E(x) = 1(.32) + 2(.51) + 3(.12) + 4(.05) = \boxed{1.9}$ *

* Send 2 program diskies

$\sigma^2 = (1-1.9)^2(.32) + (2-1.9)^2(.51) + \ldots + (4-1.9)^2(.05) = \boxed{.6299}$

$\sigma = \sqrt{.6299} = \boxed{.7937}$

(9) $\mu = E(x) = 12(.15) + 13(.20) + \ldots + 16(.09) = \boxed{13.86}$

$\sigma^2 = (12-13.86)^2(.15) + (13-13.86)^2(.20) + (16-13.86)^2(.09)$

$= \boxed{1.3204}$

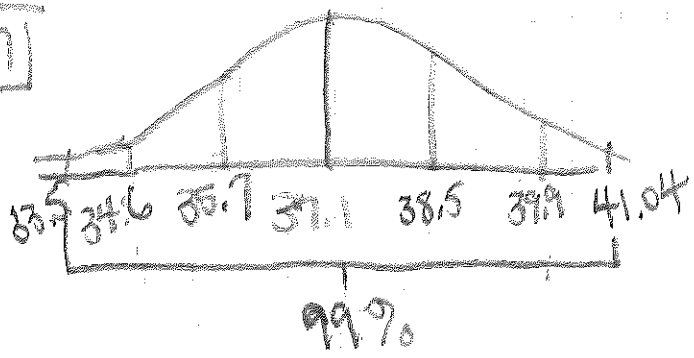
$\sigma = \sqrt{1.3204} = \boxed{1.1491}$

(10) $\mu = E(x) = 35(.1) + 36(.2) + \ldots + 39(.1) = \boxed{37.1}$

$\sigma^2 = (35-37.1)^2(.1) + (36-37.1)^2(.2) + \ldots +$

$(39-37.1)^2(.1) = \boxed{1.8436}$

$\sigma = \sqrt{1.8436} = \boxed{1.1359}$



99% percent of the pizzas were delivered between 33.5 and 41.04 minutes

Yes, it's a believable claim.