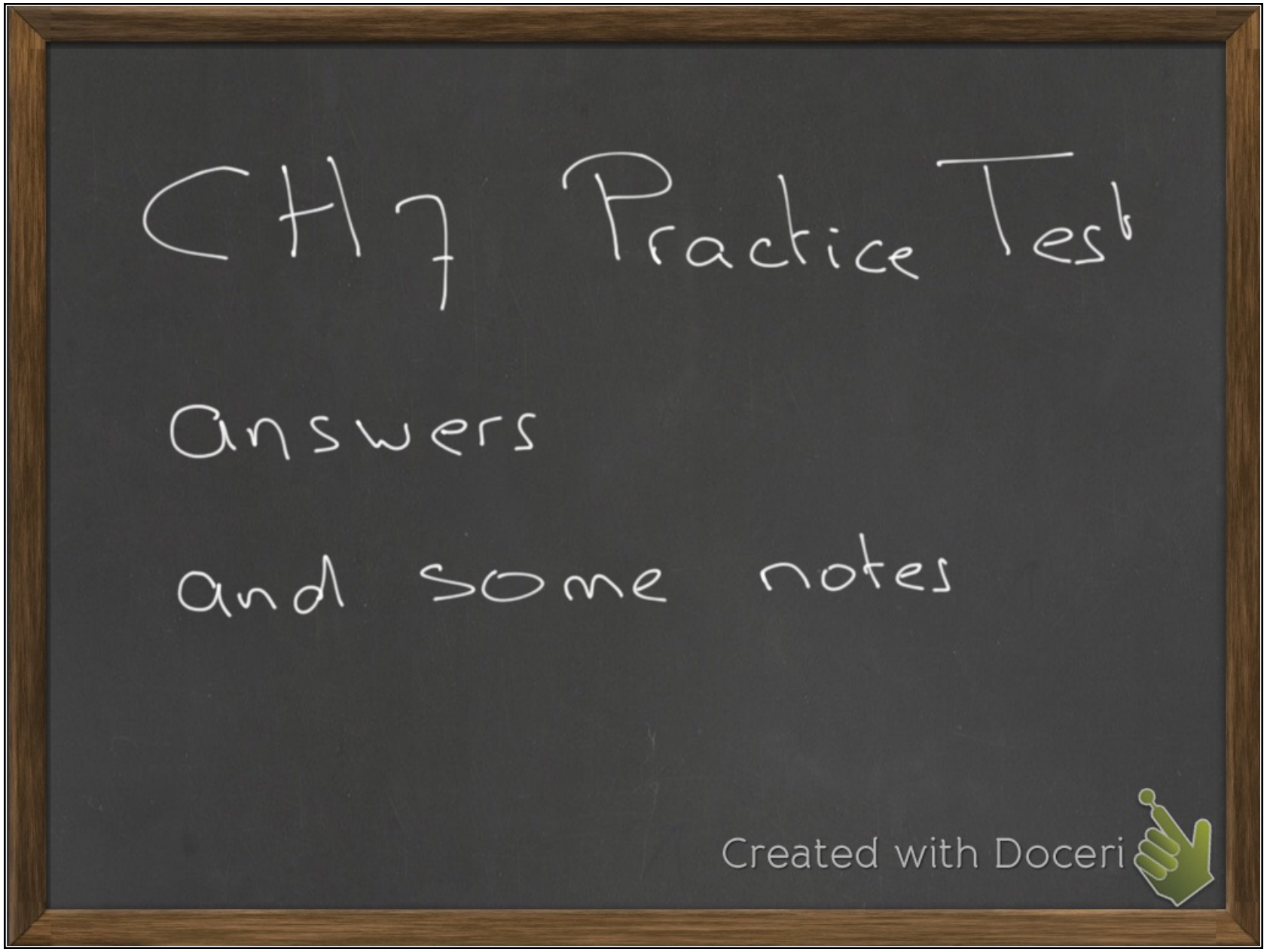
CH7 Practice Test
answers
and some notes
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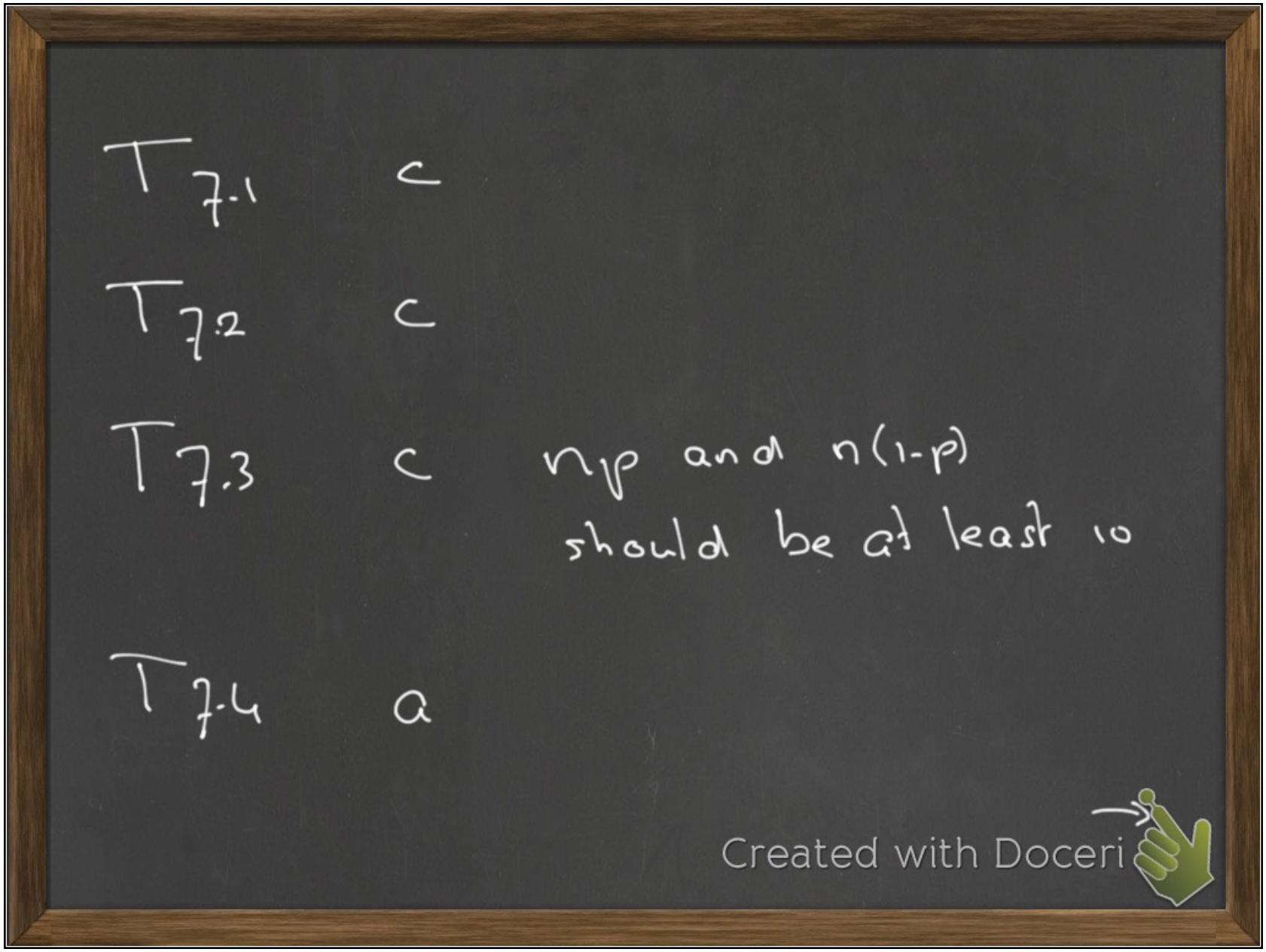
T 7.1 c
T 7.2 c
T 7.3 c np and n(1-p) should be at least 10
T 7.4 a
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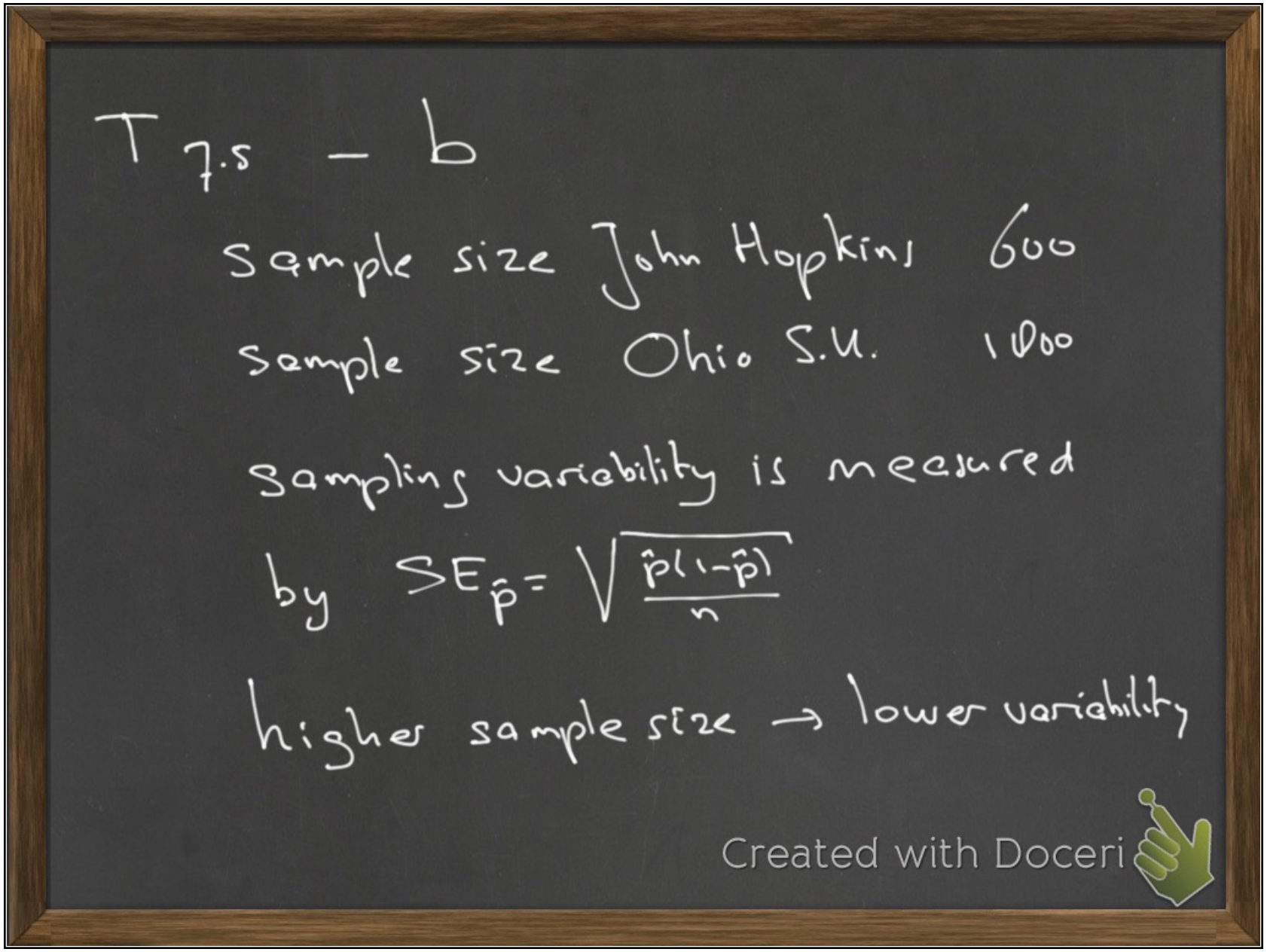
T 7.5 – b
sample size John Hopkins 600
sample size Ohio S.U. 1100
sampling variability is measured
by $SE_{\hat{p}} = \sqrt{\frac{\hat{p}(1-\hat{p})}{n}}$
higher sample size → lower variability
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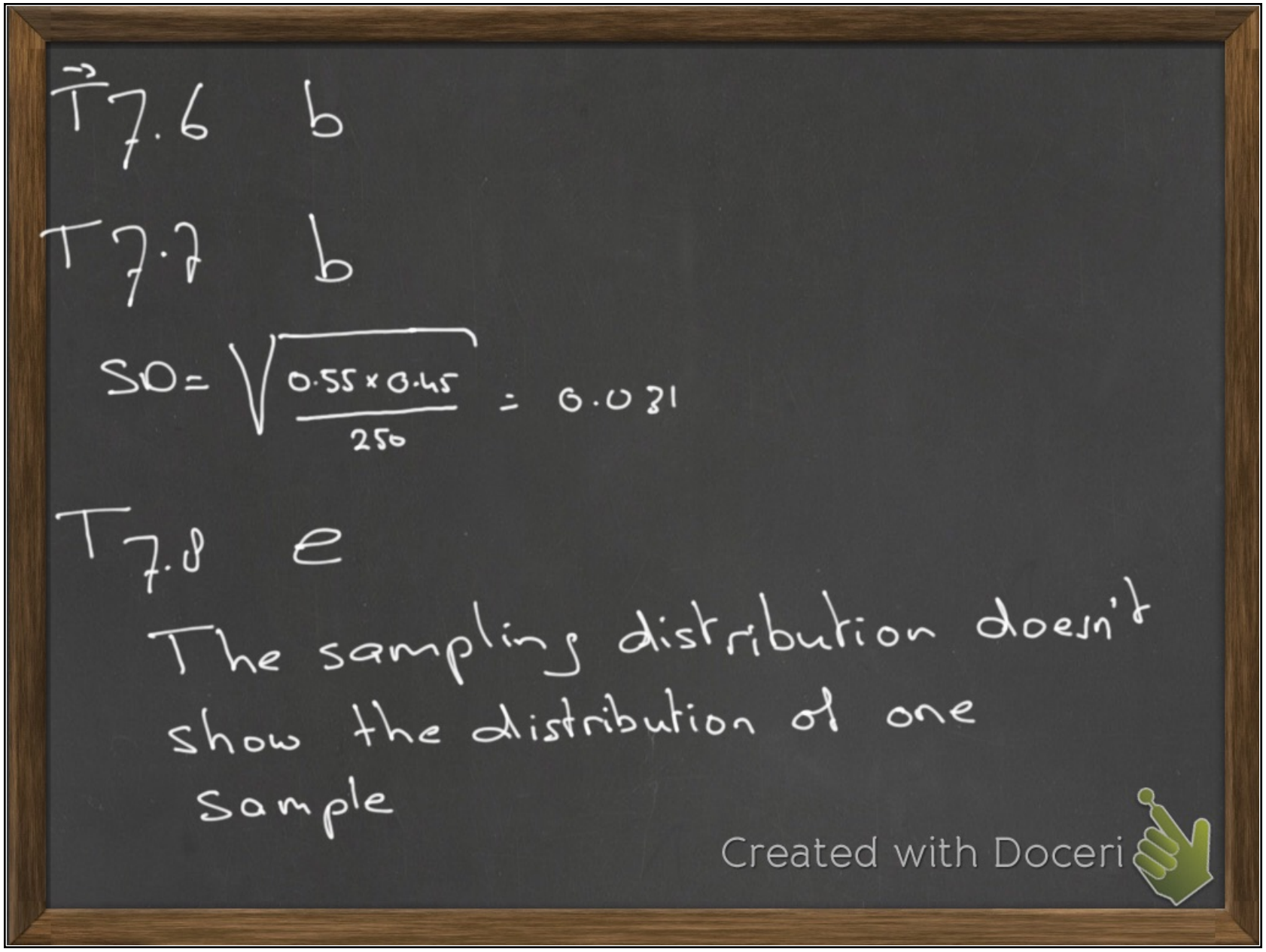
T 7.6 b
T 7.7 b
SD = √(0.55 × 0.45 / 250) = 0.031
T 7.8 e
The sampling distribution doesn't show the distribution of one sample
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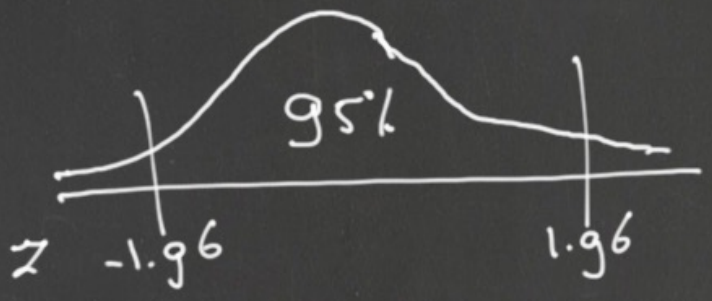
$T_{7.9} - C$

$\bar{X}$: sample mean, n = 4 bottles

$\bar{X} \sim N\left(16.05; \frac{0.1}{\sqrt{4}} = 0.05\right)$ ounce



$\bar{X}$ lies with 95% chance between

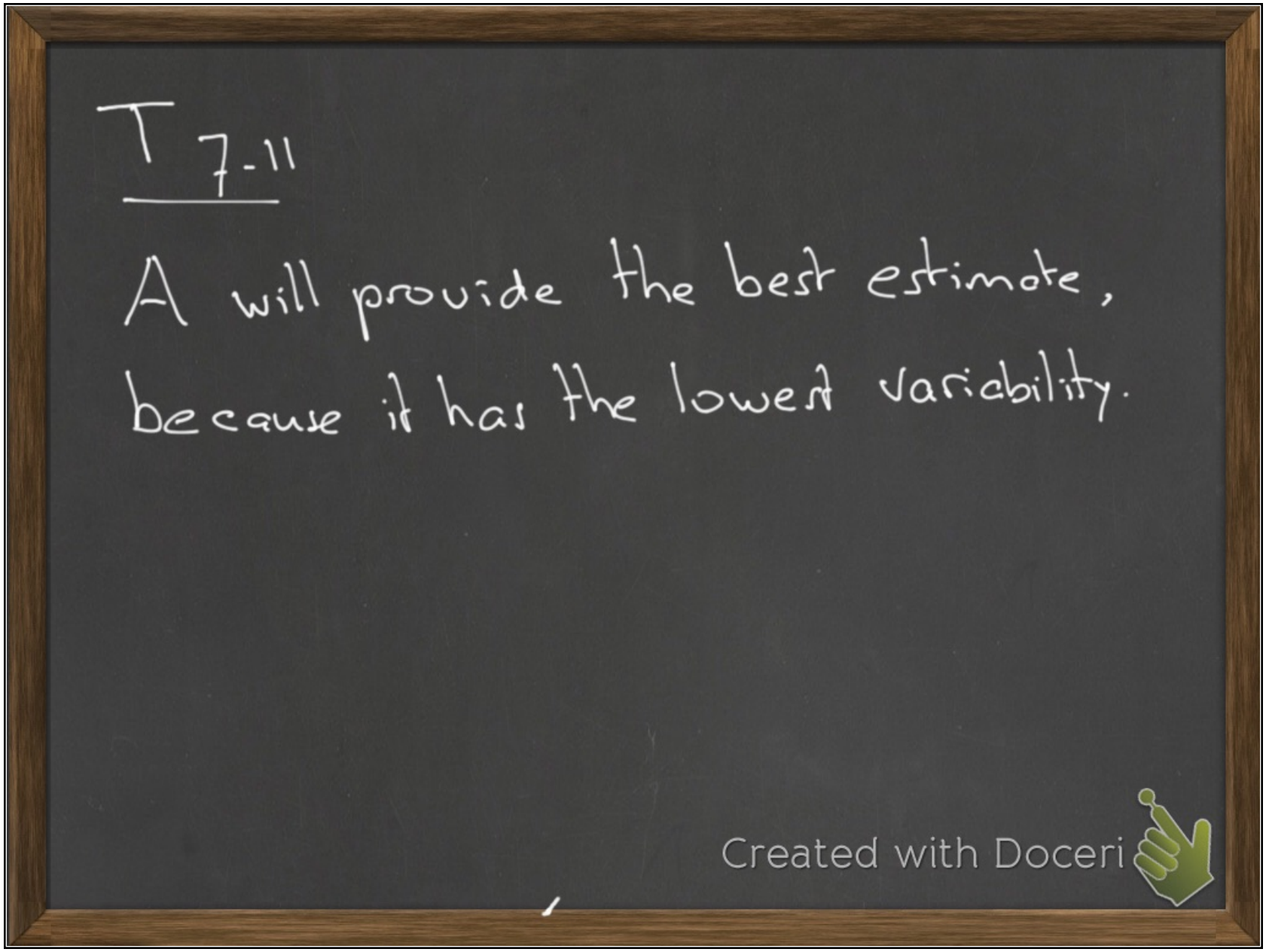
$16.05 - 1.96 \times 0.05 = 15.95$

and $16.05 + 1.96 \times 0.05 = 16.15$

T 7.10 – e

The sampling distribution is

x	80	120	160
$P(\bar{x} = x)$	$\frac{1}{4}$	$\frac{1}{2}$	$\frac{1}{4}$


T 7-11
A will provide the best estimate,
because it has the lowest variability.
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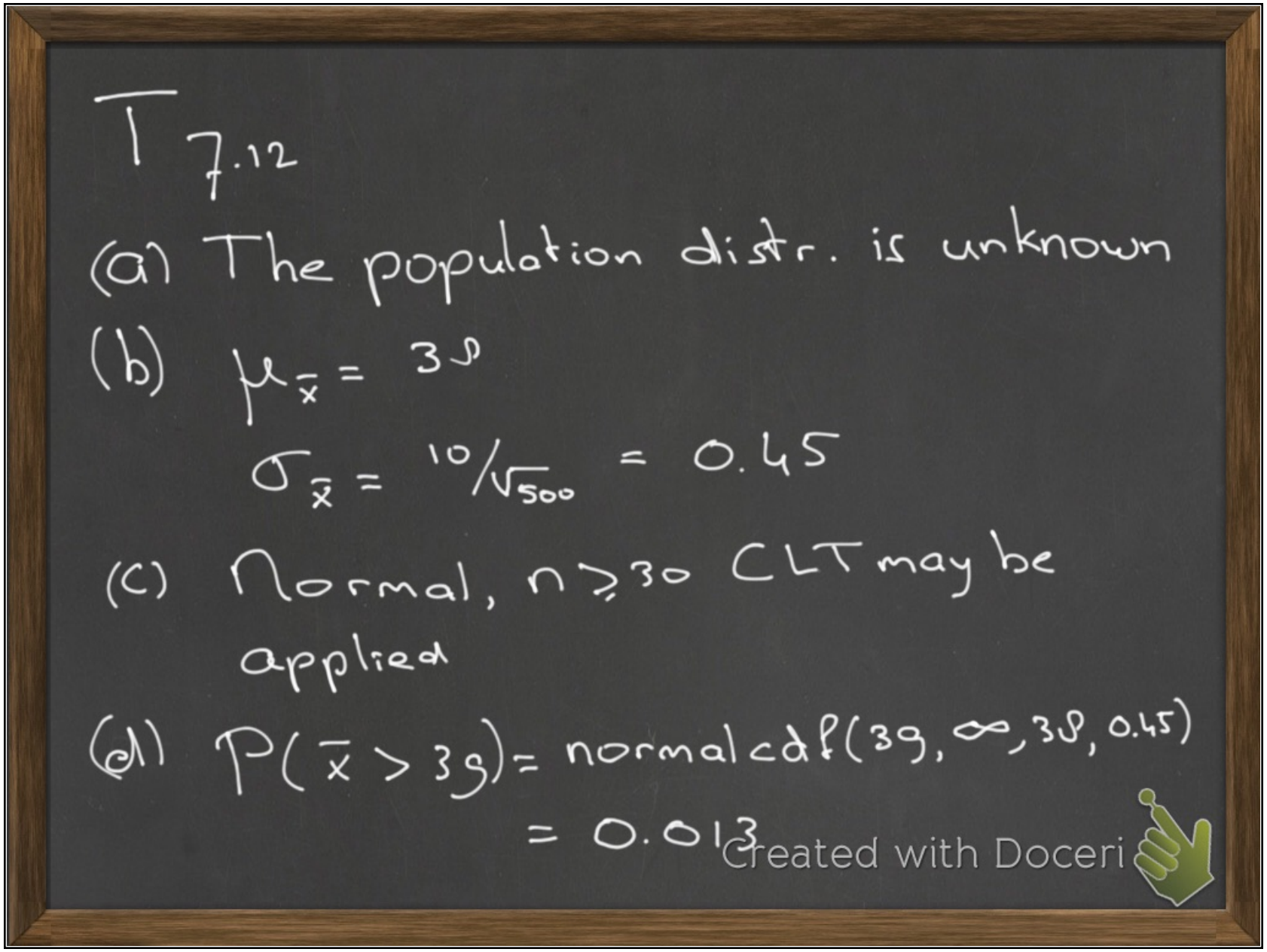
T 7.12
(a) The population distr. is unknown
(b) $\mu_{\bar{x}} = 38$
$\sigma_{\bar{x}} = 10/\sqrt{500} = 0.45$
(c) Normal, $n \geq 30$ CLT may be applied
(d) $P(\bar{x} > 39) =$ normalcdf(39, ∞, 38, 0.45)
$= 0.013$
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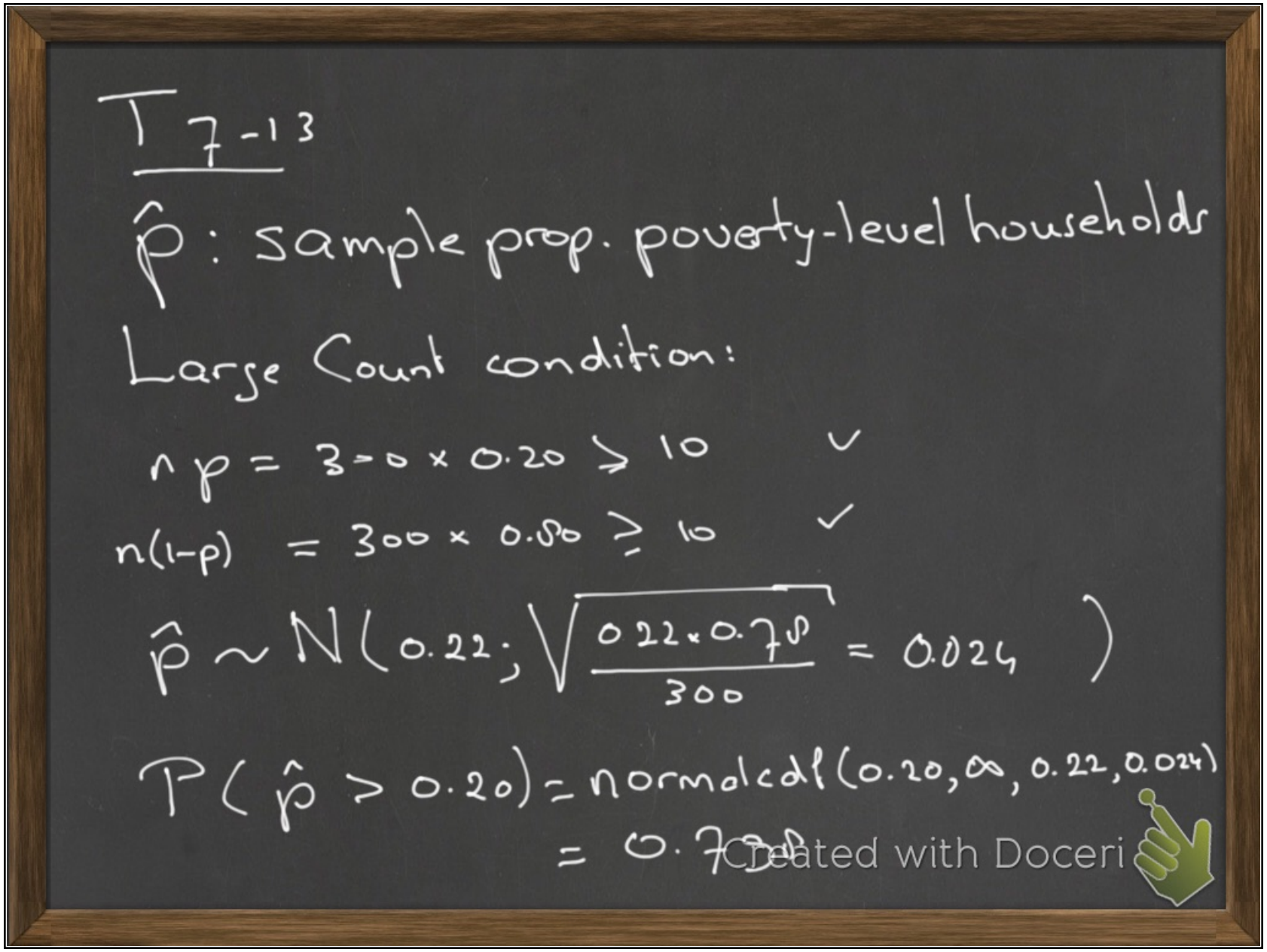
T 7-13
$\hat{p}$: sample prop. poverty-level households
Large Count condition:
$np = 300 \times 0.20 \geq 10$ ✓
$n(1-p) = 300 \times 0.80 \geq 10$ ✓
$\hat{p} \sim N(0.22; \sqrt{\frac{0.22 \times 0.78}{300}} = 0.024)$
$P(\hat{p} > 0.20) = \text{normalcdf}(0.20, \infty, 0.22, 0.024)$
$= 0.798$
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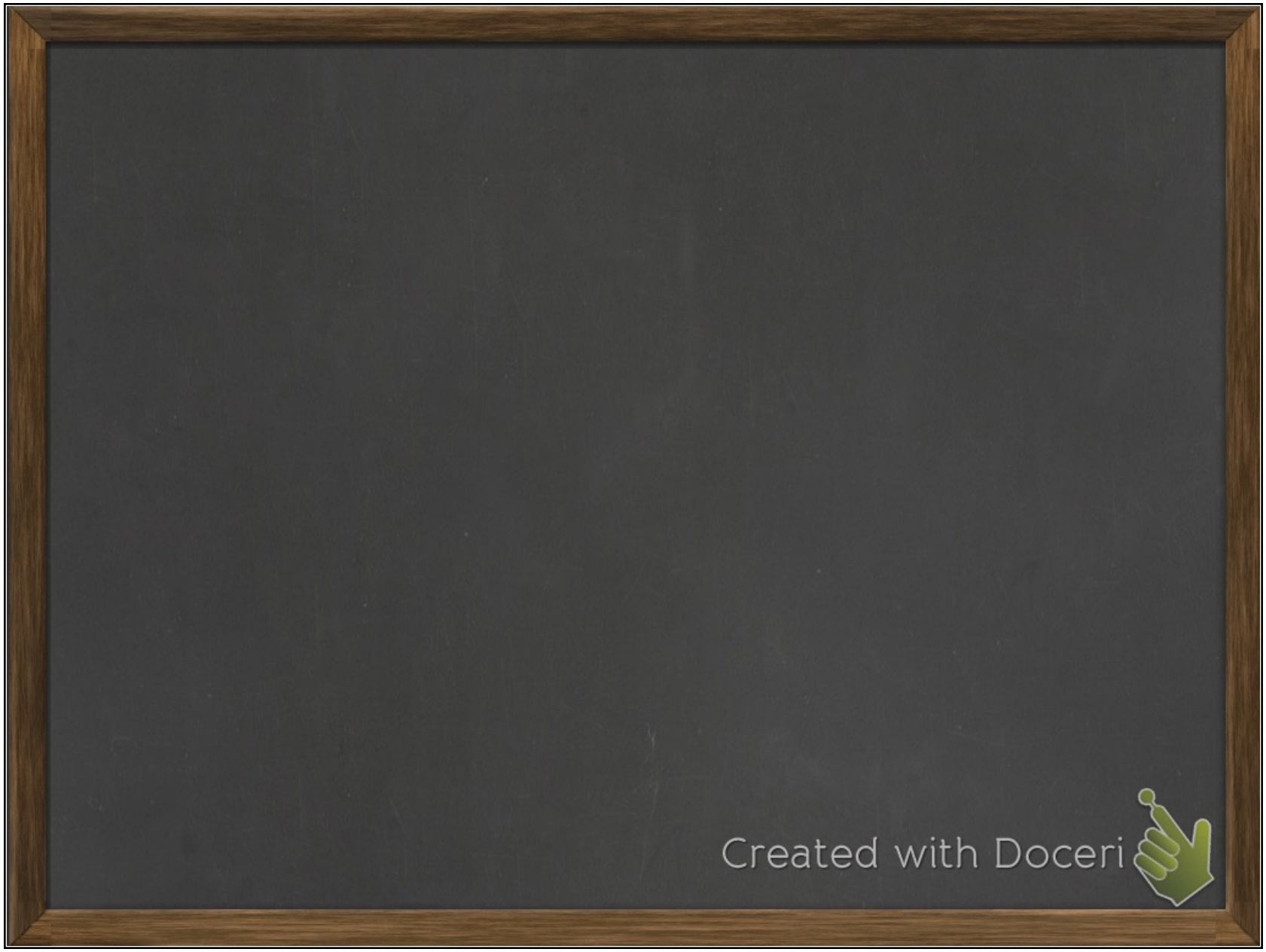
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