

REG NO:727822TUAD046

EXP:1

PROBLEM FOR PRACTICE

PROBLEM:1

INPUT:

$X \sim \text{binom}(20, 0.1)$

$\text{dbinom}(0, 20, 0.1)$

$\text{pbinom}(3, 20, 0.1, \text{lower.tail}=\text{TRUE})$

$\text{dbinom}(3, 20, 0.1)$

OUTPUT:

> $X \sim \text{binom}(20, 0.1)$

$X \sim \text{binom}(20, 0.1)$

> $\text{dbinom}(0, 20, 0.1)$

[1] 0.1215767

> $\text{pbinom}(3, 20, 0.1, \text{lower.tail}=\text{TRUE})$

[1] 0.8670467

> $\text{dbinom}(3, 20, 0.1)$

[1] 0.1901199

PROBLEM:2

INPUT:

$X \sim \text{binom}(8, 0.17)$

$\text{dbinom}(3, 8, 0.17)$

$\text{pbinom}(1, 8, 0.17, \text{lower.tail}=\text{FALSE})$

$\text{pbinom}(1, 8, 0.17, \text{lower.tail}=\text{TRUE})$

OUTPUT:

> $X \sim \text{binom}(8, 0.17)$

$X \sim \text{binom}(8, 0.17)$

> $\text{dbinom}(3, 8, 0.17)$

[1] 0.108374

> $\text{pbinom}(1, 8, 0.17, \text{lower.tail}=\text{FALSE})$

[1] 0.4057205

> $\text{pbinom}(1, 8, 0.17, \text{lower.tail}=\text{TRUE})$

[1] 0.5942795

PROBLEM:3

INPUT:

$X \leftarrow \text{Binom}(100, 0.5)$

$E(X)$

$\text{var}(X)$

OUTPUT:

> $X \leftarrow \text{Binom}(100, 0.5)$

> $E(X)$

[1] 50

> $\text{var}(X)$

[1] 25

PROBLEM:4

INPUT:

$X \leftarrow \text{Binom}(20, 1/4)$

$E(X)$

$E(5*X-2)$

$\text{var}(X)$

$\text{sd}(X)$

OUTPUT:

> $X \leftarrow \text{Binom}(20, 1/4)$

> $E(X)$

[1] 5

> $E(5*X-2)$

[1] 23

> $\text{var}(X)$

[1] 3.75

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> sd(X)
[1] 1.936492
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