

IMM - DTU

First we note

02405 Probability

2010-3-13

BFN/bfn

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$P(\text{More than 120 patients helped})$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ .

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu =$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$$\mu = n \cdot p =$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$$\mu = n \cdot p = 300 \cdot \frac{1}{3} =$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100 \text{ and } \sigma$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100 \text{ and } \sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}}$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100 \text{ and } \sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}.$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120).

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

IMM - DTU

02405 Probability  
2010-3-13  
BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) =$$

IMM - DTU

02405 Probability  
2010-3-13  
BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 -$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi \left( \right.$$

IMM - DTU

02405 Probability  
2010-3-13  
BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi \left( \frac{120.5 - 100}{10\sqrt{\frac{2}{3}}} \right)$$

IMM - DTU

02405 Probability  
2010-3-13  
BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi\left(\frac{120.5 - 100}{10\sqrt{\frac{2}{3}}}\right)$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi\left(\frac{120.5 - 100}{8.165}\right) =$$

IMM - DTU

02405 Probability  
2010-3-13  
BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi\left(\frac{120.5 - 100}{8.165}\right) = 1 - \Phi(2.51) =$$

IMM - DTU

02405 Probability

2010-3-13

BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi\left(\frac{120.5 - 100}{8.165}\right) = 1 - \Phi(2.51) = 1 - 0.994 =$$

IMM - DTU

02405 Probability  
2010-3-13  
BFN/bfn

First we note

$$P(\text{More than 120 patients helped}) = 1 - P(\text{At most 120 patients helped})$$

and we apply The Normal Approximation to the Binomial Distribution page 99 for the second term i.e. we want to evaluate  $P(\text{At most 120 patients helped})$ . We have

$\mu = n \cdot p = 300 \cdot \frac{1}{3} = 100$  and  $\sigma = \sqrt{300 \frac{1}{3} \frac{2}{3}} = 10\sqrt{\frac{2}{3}}$ . The value of  $b$  in the formula is 120 (more than 120). As there is no probability mass to be subtracted we do not include the  $a$  term. We get

$$P(\text{More than 120 patients helped}) = 1 - \Phi\left(\frac{120.5 - 100}{8.165}\right) = 1 - \Phi(2.51) = 1 - 0.994 = 0.006$$