

Math 153 - Homework  
April 3, 2014

Name key  
Score \_\_\_\_\_

Show all work to receive full credit. Supply explanations when necessary. This problem set is due Thursday, April 10.

1. (3 points) Problem #16, Page 227

BINOMIAL

$$p = 0.127$$

$$q = 0.873$$

$$N = 2600$$

$$a) \mu = 2600 \cdot 0.127 = \boxed{330.2}$$

$$\sigma = \sqrt{2600 \cdot (0.127) \cdot (0.873)} \approx \boxed{16.978}$$

$$b) \mu - 2\sigma \approx 296.244$$

290 IS

UNUSUALLY LOW.

2. (1 point) Problem #6, Page 233

POISSON

$$\mu = 8.5$$

$$P(x=6) = \text{poissonpdf}(8.5, 6)$$

$$\approx \boxed{0.1066}$$

NOT UNLIKELY WITH

A 10.66% CHANCE.

3. (3 points) Problem #10, Page 233

$$a) \frac{5469}{41} \approx \boxed{133.39}$$

$$b) \text{poissonpdf}(133.39, 133) \approx \boxed{0.0346}$$

c) THE PROB OF EXACTLY 133

IS VERY SMALL, BUT HAVING

NEAR 133 IS COMMON ( $\mu \approx 133$ ).

4. (3 points) Problem #13, Page 234

$\mu = 0.9288$  Bombs per region

$$a) \text{poissonpdf}\left(\frac{535}{576}, 2\right) \approx \boxed{0.1704}$$

$$b) (0.1704)(576) \approx \boxed{98.15}$$

c) THE EXPECTED VALUE

IS CLOSE TO THE

ACTUAL VALUE.