

DiscussionWeek6 - Data 605

Stephanie Roark

3/6/2019

Chapter 3.2 Exercise 1

Compute the following:

(a) $\binom{6}{3} = 20$

```
choose(6,3)
```

```
## [1] 20
```

$\binom{n}{j} = \frac{n!}{j!(n-j)!} = \frac{6!}{3!(6-3)!} = 20$

```
factorial(6)/(factorial(3)*factorial(6-3))
```

```
## [1] 20
```

(b) $b(5, .2, 4) =$

$b(n, p, j) = \binom{n}{j} p^j q^{n-j}$ where $q = (1 - p)$

$= \binom{5}{4} (1/5)^4 * (4/5)^1$

```
choose(5,4)*(1/5)**4*(4/5)
```

```
## [1] 0.0064
```

(c) $\binom{7}{2} = 35$

(d) $\binom{26}{26} = 1$

(e) $b(4, .2, 3)$

```
choose(4,3)*(1/5)**3*(4/5)
```

```
## [1] 0.0256
```

(f) $\binom{6}{2} = 15$

(g) $\binom{10}{9} = 10$

(h) $b(8, .3, 5)$

```
choose(8,5)*(.3)**5*(.7)**3
```

```
## [1] 0.04667544
```