

**Worksheet 4 $\frac{1}{2}$**   
HOMEWORK OF 2012-02-14  
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1. Do problems 4, 5 on worksheet4

2. Do problems 1, 3, 5 on worksheet5

3\*. Let  $X, Y \sim Dir((x, y), \alpha, \beta, \delta)$ .

A. Find the marginal pdf with respect to X,  $D_X(x)$ .

B. Find the conditional pdf with respect to Y given  $X = \frac{1}{3}$ .

C. Is it the case that the marginal pdf with respect to X,  $D_X(x)$ , is a standard univariate pdf (if so, what?)?

That is all.