601

$X: \{1,2,\dots 6\} \to \{2,3,\dots 6\}$

$$P_X = \begin{cases} \frac{2}{6}, & x = 6 \\ \frac{1}{6}, & x \in \{2,3,4,5\} \end{cases}$$

$$EX = 6\,\frac{2}{6} + \frac{1}{6}\cdot(2+3+4+5) = 2 + \frac{14}{6} = \frac{12+14}{6} =$$

$$= 4{,}3 = \frac{13}{3}$$

602 $f_X(x) = \frac{2x}{a^2}$ $\quad 0 \le x \le a$

$$EX = \int_0^a x \cdot \frac{2x}{a^2}\,dx = \left| \frac{2x^3}{a^2 \cdot 3} \right|_0^a = \frac{2 \cdot a}{3}$$

603

609

$$D(X) = \sqrt{V(X)} = \sqrt{81} = 9$$

$$R(X) = \frac{D(X)}{V(X)} = \frac{9}{81} = \frac{1}{9}$$

610

$$f_x(X) = 3x^{-4} \quad (x \geq 1)$$

$$E(X) = \int_1^{+\infty} x \cdot 3x^{-4}\,dx = 3\,\frac{x^{-2}}{-2}\Big|_1^{+\infty} =$$

$$= +\frac{3}{2}$$

$$V(X) = E(X^2) - (EX)^2$$

$$E(X^2) = \int_1^{+\infty} x^2 \cdot 3 \cdot x^{-4}\,dx = \frac{3x^{-1}}{-1}\Big|_1^{+\infty} = 3$$

$$V(X) = 3 - \left(\frac{3}{2}\right)^2 = \frac{3}{4}$$