

slln-lemma1^{11,40}

$\forall p:\text{FinProbSpace}, f:(\mathbb{N} \rightarrow \mathbb{N}), X:(n:\mathbb{N} \rightarrow \text{RandomVariable}(p;f(n))), s, k:\mathbb{Q}.$
 $(\forall n:\mathbb{N}, i:\{0..n^-\}. f(i) < f(n))$

$\Rightarrow (\forall n:\mathbb{N}.$

$\text{E}(f(n);X(n)) = 0 \in \mathbb{Q}$

$\& \text{E}(f(n);(x.x * x) \circ X(n)) = s$

$\& \text{E}(f(n);(x.(x * x) * x * x) \circ X(n)) = k)$

$\Rightarrow (\forall n:\mathbb{N}, i:\{0..n^-\}. \text{rv-disjoint}(p;f(n);X(i);X(n)))$

$\Rightarrow (\exists B:\mathbb{Q}$

$(0 \leq B \& (\forall n:\mathbb{N}. \text{E}(f(n);(x.(x * x) * x * x) \circ \text{rv-partial-sum}(n;i.X(i))) \leq B * n * n))$)