

We perform an experiment such that for each positive integer  $n$ , the number  $n$  is produced with probability  $2^{-n}$ . A random variable  $X$  then converts the outcome  $n$  into the fraction  $\frac{1}{2n-5}$ . What is the probability that  $\frac{3X}{X^2+1}$  times  $X^4 + 2X^2 + e^X$  is positive ?

- (a)  $1/4$
- (b)  $3/4$
- (c)  $1/8$
- (d)  $7/8$
- (e)  $1/3$
- (f)  $2/3$
- (g)  $1/2$
- (h)  $1/6$
- (i)  $5/6$
- (j)  $1$
- (k)  $0$
- (l) None of these