

4. (2 points each) Circle “TRUE” or “FALSE” for each of the following problems. Circle “TRUE” only if the statement is *always* true. No explanation is necessary.

(a) The sum of the finite geometric series $\sum_{n=0}^{81} ax^n = a + ax + ax^2 + \cdots + ax^{81}$ is $\frac{a(1-x^{81})}{1-x}$ provided that $x \neq 1$.

TRUE FALSE

(b) Let $F(x)$ be the cumulative distribution function of the heights of grass plants in a meadow, measured in meters. The statement $F(0.5) = 0.25$ means that 25% of the grass plants in the meadow have a height of at most 0.5 meters.

TRUE FALSE

(c) Let $f(x)$ be the probability density function of the heights of grass plants in a meadow, measured in meters. The statement $f(0.5) = 0.7$ means that 70% of the grass plants in the meadow have height very close to 0.5 meters.

TRUE FALSE

(d) Let a quantity have density function $p(x)$, where the graph of $p(x)$ is shown in the figure. The median of the quantity is positive.

TRUE FALSE

