

9. [5 points] Find a formula for *one* polynomial $p(x)$ that satisfies *all* of the following conditions.

- The vertical intercept of the graph of $p(x)$ is 7.
- The graph of $p(x)$ has horizontal intercepts -1 , 2 , and 3 (and no others).
- $\lim_{x \rightarrow \infty} p(x) = -\infty$ and $\lim_{x \rightarrow -\infty} p(x) = \infty$.
- The degree of $p(x)$ is at most 6.

Show your work and reasoning carefully. You might find it helpful to first sketch a graph. There may be more than one possible answer, but you should give only one answer.

$$p(x) = \underline{\hspace{15em}}$$

10. [4 points] If $K = G(t) = \frac{e^t + 3}{7 + e^t}$ find a formula for $G^{-1}(K)$.

Answer: $G^{-1}(K) = \underline{\hspace{15em}}$