

Cubic polynomials

1. Given a cubic polynomial, $p(x)$. If $p(1) = -6$, $p(2) = -4$, $p(3) = 2$ and $p(4) = 18$, find the value of $p(0)$.
2. Find a cubic polynomial whose graph has horizontal tangents at $(-2, 12)$ and $(4, -6)$.

Answers:

1. $p(0) = -10$
2. $p(x) = \frac{x^3}{6} - \frac{x^2}{2} - 4x + \frac{22}{3}$