College Algebra: Quiz #18 (Solutions)

1. The polynomial
$$p(x) = x^5 + x^4 - 13x^3 - 13x^2 + 36x + 36$$

   has roots at $-2; -3; 2; 3$. Completely factor $p(x)$ as a product of linear factors.

   Solution: Using synthetic division we can see that $p(x)$ factors as

$$\boxed{(x+3)(x+2)(x-2)(x+1)(x-3)}.$$