Synthetic Division with Imaginary Numbers

Name _____

Date _____ Period _____

Complex Root Theorem

Complex roots of polynomials occur in conjugate pairs.

if $a + bi$ is a root, then $a - bi$ is also a root.

Find all roots of $P(x)$ given following roots.

$P(x) = x^3 + 2x^2 + 9x + 18$; $3i$

Find all roots of $P(x)$ given following roots.

$$P(x) = x^3 + x^2 - 29x + 91;\ 3 + 2i$$