Math 3 Name_____

PRACTICE Quiz 8.3 & 8.4 Synthetic Division & Finding Zeros

State the possible rational zeros for each function. Then factor each and find all zeros. One zero has been given.

1) $y = x^3 + 7x^2 + 15x + 25;\ -5$

State the possible rational roots for each equation. Then factor each and find all roots. One root has been given.

2) $x^5 + 2x^4 - 14x^3 - 28x^2 + 49x + 98 = 0;\ -2$

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1) $y = x^3 + 7x^2 + 15x + 25;\ -5$

Possible rational zeros: $\pm 1, \pm 5, \pm 25$
Factors to: $y = (x^2 + 2x + 5)(x + 5)$
Zeros: $\{-1 + 2i, -1 - 2i, -5\}$

State the possible rational roots for each equation. Then factor each and find all roots. One root has been given.

2) $x^5 + 2x^4 - 14x^3 - 28x^2 + 49x + 98 = 0;\ -2$

Possible rational roots:
$\pm 1, \pm 2, \pm 7, \pm 14, \pm 49, \pm 98$
Factors to: $(x^2 - 7)^2(x + 2) = 0$
Roots: $\{\sqrt{7}$ mult. 2, $-\sqrt{7}$ mult. 2, $-2\}$