NAME _____ QUARTER 1

GRADE & SECTION _____ DATE _____

Activity: Remainder Theorem and Factor Theorem

RECALL

Remainder Theorem

If a polynomial $f(x)$ is divided by $x - c$, then the remainder is $r = f(c)$.

Factor Theorem

A polynomial $f(x)$ has a factor $x - c$, if and only if $f(c) = 0$.

Divide the first polynomial by the second polynomial. Complete the solution to know the remainder then determine if the divisor is a factor or not of the dividend.

1) $x^4 - 2x^3 + x^2 - 14x + 6$ *by* $x - 3$

$P(\boxed{3}) = (\boxed{3})^4 - 2(\boxed{3})^3 + (\boxed{3})^2 - 14(\boxed{3}) + 6$

$P(\boxed{}) = \boxed{}$

Since the remainder is _____, then $x - 3$ is _____ of $x^4 - 2x^3 + x^2 - 14x + 6$.

2) $x^4 - 6x^2 - 13x + 13$ *by* $x - 3$

$P(\boxed{}) = (\boxed{})^4 - 6(\boxed{})^2 - 13(\boxed{}) + 13$

$P(\boxed{}) = \boxed{}$

Since the remainder is _____, then $x - 3$ is _____ of $x^4 - 6x^2 - 13x + 13$.

3) $x^3 + 5x^2 + 4x + 16$ *by* $x + 5$

$P(\boxed{}) = (\boxed{})^3 + 5(\boxed{})^2 + 4(\boxed{}) + 16$

$P(\boxed{}) = \boxed{}$

Since the remainder is _____, then $x - 3$ is _____ of $x^3 + 5x^2 + 4x + 16$.

4) $x^3 - x^2 - 14x + 24$ *by* $x + 4$

$P(\boxed{}) = (\boxed{})^3 - (\boxed{})^2 - 14(\boxed{}) + 24$

$P(\boxed{}) = \boxed{}$

Since the remainder is _____, then $x - 3$ is _____ of $x^3 - x^2 - 14x + 24$.

How many attempts? ___.
How well did you do?

 Need help!  Just OK!  Splendid

I HAVE TO REMEMBER THAT…

_____

_____

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