Name _____   Date _____

Applying the Remainder Theorem - Guided Lesson Explanation

Explanation#1

In algebra, the remainder theorem is an applicant of polynomial long division. It states that the remainder of a polynomial f(k) divided by a linear divisor k – c is equal to f(k). We know the remainder after dividing by k-c we don't need to do any division. We have to just calculate f(k).

$k^2 - 9k - 5 \div k - 4$

Step 4) We will calculate f(4). And put 4 into all slots and solve:

$= 4^2 - 9(4) - 5$

$= 16 - 36 - 5$

$= -25$

So, the answer is -25.

Explanation#2

We follow the same format once again.

$x^4 - 3x^2 + 4 \div x - 2$

Step 4) We will calculate f(2). And put 2 into all slots and solve:

$= 2^4 - 3(2)^2 + 4$

$= 16 - 12 + 4 = 8$

So, the answer is 8.

Explanation#3

$x^2 + 5x + 6 \div x + 3$

Step 4) We will calculate f(3). And put 3 into all slots and solve:

$= 3^2 + 5(3) + 6$

$= 9 + 15 + 6$

$= 30$

So, the answer is 30.