

Name _____

Date _____

Applying the Remainder Theorem- Step-by-Step Lesson

What is the remainder of this quotient?

$$(4x^2 - 10x - 4) \div (x - 2)$$



Explanation:

In algebra, the remainder theorem is an application of polynomial long division. It states that the remainder of a polynomial $f(x)$ divided by a linear divisor $(x - c)$ is equal to $f(c)$.

We know the remainder after dividing by $x - c$ we don't need to do any division. We have to just calculate $f(c)$.

$$(4x^2 - 10x - 4) \div (x - 2)$$

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

$$= 4(2)^2 - 10(2) - 4$$

$$= 4 \times 4 - 20 - 4$$

$$= 16 - 20 - 4$$

$$= -8$$

So, the answer is -8.

