Rewriting Rational Expressions: Practice

Save and Exit

Consider the functions f and g.

$$f(x) = 6x^4 - 23x^3 + 31x^2 - 17x - 1$$
$$g(x) = 2x - 3$$

Find the quotient of f and g in the following form, where q is the quotient and r is the remainder.

$$\frac{f(x)}{g(x)} = q(x) + \frac{r(x)}{g(x)}$$

- $\frac{f(x)}{g(x)} = 3x^3 + 7x^2 - 5x + 1 - \frac{2x+3}{4}$
- ✓ $\frac{f(x)}{g(x)} = 3x^3 - 7x^2 + 5x - 1 - \frac{4}{2x-3}$
- $\frac{f(x)}{g(x)} = 3x^3 + 7x^2 - 5x + 1 - \frac{4}{2x+3}$
- $\frac{f(x)}{g(x)} = 3x^3 - 7x^2 + 5x - 1 + \frac{2x-3}{4}$

✓

Use long division to find the quotient of f and g.

$$\begin{array}{r} 3x^3 - 7x^2 + 5x - 1 \\ 2x - 3 \overline{)\,6x^4 - 23x^3 + 31x^2 - 17x - 1} \\ \underline{-(6x^4 - 9x^3)} \\ -14x^3 + 31x^2 \\ \underline{-(-14x^3 + 21x^2)} \\ 10x^2 - 17x \\ \underline{-(10x^2 - 15x)} \end{array}$$