

Quick
Check
7.1.19

Simplify the rational expression. Assume that variable x has no value which results in the denominator with a value of zero.

$$\frac{15-5x}{5x^2-16x+3}$$

$$\frac{15-5x}{5x^2-16x+3} = \square$$

Step 1: Factor everything completely.

• Numerator: $15-5x$

Standard form $-5x+15$

GCF $-5(x-3)$

• Denominator $5x^2-16x+3$

3 terms, lead $\neq 1$ means double x
rewrite middle term

$$5x^2-15x-x+3$$

group $5x(x-3)-1(x-3)$
 $(x-3)(5x-1)$

$$\begin{array}{r} 5(3) \\ 15 \\ -15 \quad -1 \\ -16 \end{array}$$

Step 2: Cancel common factors

$$\frac{15-5x}{5x^2-16x+3} = \frac{-5(\cancel{x-3})}{(\cancel{x-3})(5x-1)}$$

$$= \boxed{\frac{-5}{5x-1}}$$