a) $4 a^{2} b c+20 a b^{2} c-14 a b c^{2}$
b) $6 x^{2}+7 x-20$
c) $2 x^{3}-50 x$

MCR 3UI
Simplifying Rational Expressions and Stating Restrictions

What is a Rational Expression?
An expression written with $\qquad$ - in the numerator and/or denominator
(like a fraction, only with $\qquad$ !)

What is a Restriction?
The value for the $\qquad$ where the expression cannot be defined (whatever value makes the $\qquad$
$\qquad$ ).

## Steps to Simplifying Rational Expressions

1. $\qquad$ the numerator and denominator.
2. $\qquad$ out any factors that are common to both the numerator and the denominator.
3. $\qquad$ the remaining polynomials.
4. Determine and state the on each variable.

Examples: Simplify each of the following rational expressions and state the restrictions on the variable.
a) $\frac{6 x^{5} y^{3}}{24 x^{2} y}$
b) $\frac{4 t^{2}+8 t}{4 t}$
c) $\frac{3-2 x}{4 x-6}$
d) $\frac{8 x^{3}+4 x^{2}}{6 x^{2}+3 x}$
e) $\frac{5 x^{2}+3 x-2}{4 x^{2}+x-3}$
e) $\frac{9 x^{2}-4 y^{2}}{3 x^{2}+13 x y-10 y^{2}}$

