

# Algebra 1

Chapter 11

Section 11-1

Simplify each fraction completely.

$$\frac{6}{8} \text{ GCF: } 2$$

$$\frac{18}{45} \text{ GCF: } 9$$

$$\frac{56}{35} \text{ GCF: } 7$$

$$\frac{3}{4}$$

$$\frac{2}{5}$$

$$\frac{8}{5}$$

Simplify each fraction completely.

$$\frac{6ab^2}{9b^5}$$

$$\text{GCF: } 3b^2$$

$$\frac{k^4m^{11}}{k^7m^6}$$

$$\text{GCF: } k^4m^6$$

$$\frac{2a}{3b^3}$$

$$\frac{m^5}{k^3}$$

Simplify each fraction completely.

What values are excluded from the domain?

$$\frac{(y+5)\cancel{(y-4)}}{\cancel{(y-4)}(3y-1)}$$

$$\frac{y+5}{3y-1}$$

$$\text{GCF: } (y-4)$$

Excluded

$$(y-4)(3y-1) \neq 0$$

$$y-4 \neq 0$$

$$+4 \quad +4$$

$$y \neq 4$$

$$3y-1 \neq 0$$

$$+1 \quad +1$$

$$\frac{3y}{3} = \frac{1}{3}$$

$$y \neq \frac{1}{3}$$

Simplify each fraction completely.

What values are excluded from the domain?

$$\frac{r^5(x+7)}{r^2(x-8)(7+x)}$$

$$\frac{r^3}{x-8}$$

$$\text{GCF: } r^2(x+7)$$

Excluded

$$r^2(x-8)(7+x) \neq 0$$

$$\begin{array}{ccc} \downarrow & \downarrow & \downarrow \\ \sqrt{r^2} \neq 0 & x-8 \neq 0 & 7+x \neq 0 \\ & +8 \quad +8 & -7 \quad -7 \\ r \neq 0 & x \neq 8 & x \neq -7 \end{array}$$

$$r \neq 0$$

$$x \neq 8, -7$$

Simplify each fraction completely.

State any excluded values.

$$\frac{5-t}{7t-35} = \frac{5-t}{7(t-5)} = \frac{-1(t-5)}{7(t-5)}$$

GCF:  $t-5$

$$\frac{-1}{7} \left\{ \begin{array}{l} \text{Excluded} \\ 7(t-5) \neq 0 \\ t-5 \neq 0 \\ t \neq 5 \end{array} \right.$$

$$\frac{6x^3 - 11x^4}{x^5} = \frac{x^3(6-11x)}{x^5}$$

GCF:  $x^3$

$$\frac{6-11x}{x^2} \left\{ \begin{array}{l} \text{Excluded} \\ x^5 \neq 0 \\ x \neq 0 \end{array} \right.$$

Simplify each fraction completely.

State any excluded values.

$$\frac{x^2 - 4x + 3}{x^2 - 9}$$

Top  
 $(x-1)(x-3)$

Bottom  
 $x^2 - 3^2$   
 $(x+3)(x-3)$

GCF:  $(x-3)$

$$\boxed{\frac{x-1}{x+3}}$$

Excluded

$$x^2 - 9 \neq 0$$
$$\sqrt{x^2} \neq \sqrt{9}$$
$$x \neq 3, -3$$

Simplify each fraction completely.

State any excluded values.

$$\frac{6y^2 + 2y - 20}{2x^2 + 18x + 28}$$

Top

$$2(3y^2 + y - 10)$$

|        |
|--------|
| -30    |
| -1, 30 |
| -2, 15 |
| -3, 10 |
| -5, 6  |

$3y^2 - 5y + 6y - 10$

$y(3y - 5) + 2(3y - 5)$

$2(y + 2)(3y - 5)$

|                   |
|-------------------|
| $(y + 2)(3y - 5)$ |
| $(x + 7)(x + 2)$  |

Bottom

$$2(x^2 + 9x + 14)$$

$$2(x + 7)(x + 2)$$

↓

|                |                |
|----------------|----------------|
| $x + 7 \neq 0$ | $x + 2 \neq 0$ |
| $-7 -7$        | $-2 -2$        |
| $x \neq -7$    | $x \neq -2$    |



## Simplify Ration Expression

- 1) Factor
- 2) GCF
- 3) Cancel
- 4) Find Excluded