

Key

Math 095  
Quiz 4 = (6.1)

1) Simplify:  $\frac{4x-4}{4x} = \frac{\cancel{4}(x-1)}{\cancel{4}x} = \frac{\cancel{4}(x-1)}{\cancel{4}x} = \boxed{\frac{x-1}{x}}$

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2) Multiply and if possible simplify:  $\frac{y^2-16}{4y+12} \cdot \frac{y+3}{y-4}$

$= \frac{(y-4)(y+4)}{4(y+3)} \cdot \frac{(y+3)}{\cancel{(y+3)}} = \boxed{\frac{y-4}{4}}$

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3) Divide and if possible simplify:  $\frac{15x^5}{6y^2} \div \frac{5x}{12y^9}$

$$\begin{aligned} &= \frac{15x^5}{6y^2} \cdot \frac{12y^9}{5x} && /10 \\ &= \frac{5 \cdot 3 \cdot x^5 \cdot 6 \cdot 2 \cdot y^9}{6y^2 \cdot 5 \cdot x} = \frac{6x^4 \cdot y^7}{y^2 \cdot x} = 6x^4y^7 \end{aligned}$$

4) Let  $f(x) = \frac{(x-2)}{(x+4)}$ . Determine the domain of the function and find the vertical asymptotes of the graph of the function.

$$\text{Domain} = \{x \mid x \neq -4\}$$

Vertical Asymptote

$$x = -4$$

Solve by setting  
denominator = 0

$$x+4=0$$

$$x=-4$$

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