

Trig

Review Ch. 1

11-53 eoo

55-65 o

(23)

$$f(x) = x^2 - 4x$$

$$g(x) = \frac{4}{x-4}$$

$$f \cdot g = \left(\frac{x(x-4)}{1} \right) \left(\frac{4}{x-4} \right)$$

$$\frac{4x(x-4)}{(x-4)} = 4x$$

$$(f+g)(x) = \frac{x^2-4x}{x-4} + \frac{4}{x-4}$$

$$= \frac{x^3 - 4x^2 - 4x^2 + 16x + 4}{x-4}$$

$$= \frac{x^3 - 8x^2 + 16x + 4}{x-4}$$

$$\frac{f}{g} = \frac{x^2 - 4x}{\frac{4}{x-4}} \cdot \frac{x-4}{4}$$

$$\left(\frac{x^2 - 4x}{1} \right) \left(\frac{x-4}{4} \right)$$

$$\frac{x^3 - 4x^2 - 4x^2 + 16x}{4}$$

$$\frac{x^3 - 8x^2 + 16x}{4}$$

(27)

$$f(x) = 6 + x$$

$$g(x) = x^2 - x + 1$$

$$(f \circ g)(x)$$

$$x \rightarrow \boxed{\overset{g}{(\checkmark)^2 - (\checkmark) + 1}} \xrightarrow{x^2 - x + 1} \boxed{\overset{f}{6 + (x^2 - x + 1)}} = x^2 - x + 7$$

(28)

$$(g \circ f)(x)$$

$$x \Rightarrow \boxed{\overset{f}{6 + (x)}} \xrightarrow{6+x} \boxed{\overset{g}{(6+x)^2 - (6+x) + 1}} \rightarrow$$

$$\begin{array}{r} 6+x \\ 6+x \\ \hline 12x + x^2 \\ 36 + 6x \\ \hline 36 + 12x + x^2 \end{array}$$

$$x^2 + 12x + 36 - 6 - x + 1$$

$$x^2 + 11x + 31$$

$\textcircled{55}$ $\textcircled{-1}$ $\text{if } -2 \leq x \leq 0$
 $f(x) = -3x \text{ if } 0 < x \leq 2$
 $2x \text{ if } 2 < x \leq 4$

