MCR3UI Unit 1 :Functions & Equivalent Algebraic Expressions

1. Determine whether $g(x)$ is the simplified versions of $f(x)$. If it is, then state the restrictions needed. If not, determine the correct simplified version.

a) $f(x)=\dfrac{x^2+11x+30}{x+6}$, $g(x)=x+5$

b) $f(x)=\dfrac{x^2-16}{x^2-8x+16}$, $g(x)=x+4$

c) $f(x)=\dfrac{x^2+6x+5}{x+5}$, $g(x)=x^2$

d) $f(x)=\dfrac{x^2+10x+16}{x^2+2x-48}$, $g(x)=\dfrac{x+2}{x-6}$

e) $f(x)=\dfrac{12x^2-5x-2}{3x^2-2x}$, $g(x)=\dfrac{4x+1}{x}$

f) $f(x)=\dfrac{5x^2-23x-10}{5x+2}$, $g(x)=-23x-2$

g) $f(x)=\dfrac{x+4}{x^2+9x+20}$, $g(x)=\dfrac{3x^2-9x}{3x^3+6x^2-45x}$

h) $f(x)=(x+6)(x-8)+(x+16)(x+3)$,
$g(x)=3(x^2+3x+5)-(x-5)(x-3)$

i) $f(x)=(x+5)(x-4)-(x-8)(x-1)$,
$g(x)=2(5x-28)$

Answers Unit 1 : Functions & Equivalent Algebraic Expressions

a) Yes; $x\neq-6$ b) No; $f(x)=\dfrac{x+4}{x-4}, x\neq 4$ c) No; $f(x)=x+1, x\neq-5$ d) Yes; $x\neq-8,$

e) Yes; $x\neq\dfrac{2}{3}$ f) No; $f(x)=x-5, x\neq-\dfrac{2}{5}$ g) $f(x)=g(x)=\dfrac{1}{x+5}, x\neq$ $,-4,0,3$

h) equivalent; no restrictions i) not equivalent