**Domain and Range**

Find the ranges for each of these functions and their domains:

(a) $f\left(x\right)=5x+1 x=\left\{1, 2, 3\right\}$

(b) $g\left(x\right)=x^{2}-3 x=\left\{3, 4, 5\right\}$

(c) $h\left(x\right)=\sqrt{2x+1} x=\left\{2, 4,12\right\}$

The domain is $\{1, 2, 3, 4\}$. Find the ranges of these functions:

(d) $f:x\rightarrow x+9$

(e) $g:x\rightarrow 2x^{2}$

(f) $h:x\rightarrow \frac{x}{x+1}$

What value of $x$ must be excluded from the domains for the following functions?

(g) $f\left(x\right)=\frac{3}{x}$

(h) $g\left(x\right)=\frac{x}{x-2}$

(i) $h\left(x\right)=\frac{x+1}{x+2}$

What values of $x$ must be excluded from the domains for the following functions?

(j) $f:x\rightarrow \sqrt{x}$

(k) $g:x\rightarrow \sqrt{x-3}$

(l) $h:x\rightarrow \sqrt{x+2}$

What values of $x$ must be excluded from the domains for the following functions?

(m) $f\left(x\right)=\frac{2}{x-1}+\frac{3}{x+5}$

(n) $g\left(x\right)=\sqrt{2x-1}$

**Domain and Range**

Find the ranges for each of these functions and their domains:

(a) $f\left(x\right)=5x+1 x=\left\{1, 2, 3\right\}$

(b) $g\left(x\right)=x^{2}-3 x=\left\{3, 4, 5\right\}$

(c) $h\left(x\right)=\sqrt{2x+1} x=\left\{2, 4,12\right\}$

The domain is $\{1, 2, 3, 4\}$. Find the ranges of these functions:

(d) $f:x\rightarrow x+9$

(e) $g:x\rightarrow 2x^{2}$

(f) $h:x\rightarrow \frac{x}{x+1}$

What value of $x$ must be excluded from the domains for the following functions?

(g) $f\left(x\right)=\frac{3}{x}$

(h) $g\left(x\right)=\frac{x}{x-2}$

(i) $h\left(x\right)=\frac{x+1}{x+2}$

What values of $x$ must be excluded from the domains for the following functions?

(j) $f:x\rightarrow \sqrt{x}$

(k) $g:x\rightarrow \sqrt{x-3}$

(l) $h:x\rightarrow \sqrt{x+2}$

What values of $x$ must be excluded from the domains for the following functions?

(m) $f\left(x\right)=\frac{2}{x-1}+\frac{3}{x+5}$

(n) $g\left(x\right)=\sqrt{2x-1}$