Combinations of Functions

Match. Not all choices are used. You may need to simplify your answer.

$f(x)=x^2+7$ $g(x)=\sqrt{x-3}$ $h(x)=\dfrac{x}{x+17}$

_____1. $f(x)+g(x)$

_____2. $h(x)-f(x)$

_____3. $g(f(x))$

_____4. $f(g(x))$

_____5. $f(x)g(x)$

_____6. $h(x)g(x)$

_____7. $h(g(x))$

_____8. $\dfrac{g(x)}{h(x)}$

_____9. $g(h(x))$

_____10. $g(g(x))$

A. $x^2+7\sqrt{x-3}$

B. $(x^2+7)\sqrt{x-3}$

C. $x+4$

D. $x+2$

E. $\sqrt{\sqrt{x-3}-3}$

F. $\sqrt{\dfrac{x}{x+17}-3}$

G. $\dfrac{x\sqrt{x-3}}{x+17}$

H. $\dfrac{\sqrt{x-3}}{\sqrt{x-3}+17}$

I. $\sqrt{x^2+4}$

J. $\dfrac{(x+17)\sqrt{x-3}}{x}$

K. $\dfrac{x}{x+17}-x^2+7$

L. $x^2+7+\sqrt{x-3}$

M. None of these listed