MAT 171 Homework Section 2.6: Combinations of Functions; Composite Functions
Name_____

Find the domain of each function.

1) $g(x)=\dfrac{3}{x-4}$

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2) $f(x)=x^2-2x-15$

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3) $f(x)=\sqrt{x-3}$

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4) $f(x)=\dfrac{1}{\sqrt{x-3}}$

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5) $f(x)=\sqrt{24-2x}$

Find $f+g$, $f-g$, fg, and $\dfrac{f}{g}$ **. Determine the domain of each function.**

6) $f(x)=2x+3$, $g(x)=x-1$.

a) $f+g$

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b) $f-g$

c) fg (Remember: $f(x)=2x+3$, $g(x)=x-1$)

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d) $\frac{f}{g}$

7) $f(x)=2x^2-x-3$ and $g(x)=x+1$.

a) $f+g$

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b) $f-g$

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c) fg

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d) $\frac{f}{g}$

8) $f(x)=\sqrt{x}$ and $g(x)=x-4$.

a) $f+g$

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b) $f-g$

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c) fg

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d) $\frac{f}{g}$

9) $f(x)=\sqrt{x-2}$ and $g(x)=\sqrt{2-x}$.

a) $f+g$

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b) $f-g$

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c) fg

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d) $\frac{f}{g}$

10) Given, $f(x)=2x; g(x)=x+7$, find

a) $(f \circ g)(x)$ and domain

b) $(g \circ f)(x)$ and domain

c) $(f \circ g)(2)$

d) $(g \circ f)(2)$

11) Given, $f(x)=\sqrt{x}; g(x)=x-1$, find

a) $(f \circ g)(x)$ and domain

b) $(g \circ f)(x)$ and domain

c) $(f \circ g)(2)$

d) $(g \circ f)(2)$

12) Given, $f(x)=\sqrt{x}; g(x)=x-2$, find

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

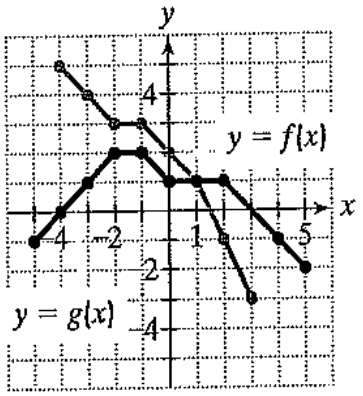
b) Domain of $f \circ g$

13) Given, $f(x)=x^2+4; g(x)=\sqrt{1-x}$, find

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

b) Domain of $f \circ g$

Use the graphs of f and g to solve 14 – 16.

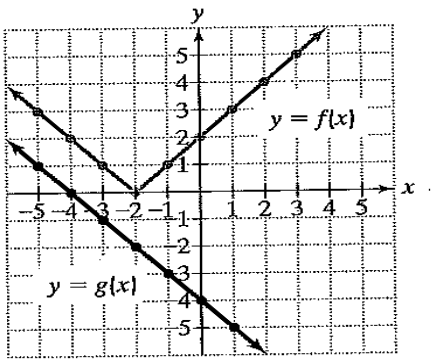


14) $(f+g)(-3)$

15) $(g-f)(-2)$

16) $(fg)(2)$

Use the graphs of f and g to evaluate each composite function.



17) $(f \circ g)(-1)$

18) $(f \circ g)(1)$

19) $(g \circ f)(0)$

20) $(g \circ f)(-1)$