

Precalculus Quiz

Name \_\_\_\_\_

Date \_\_\_\_\_

Use these functions to answer problems 1-8

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$$c(x) = x - 5 \quad p(x) = \sqrt{3 + x} \quad d(x) = \frac{2}{x - 2} \quad f(x) = \frac{1}{x^2 - 16}$$

$$g(x) = -4x^2 \quad j(x) = \frac{x + 1}{x - 3} \quad r(x) = 2x - 6 \quad s(x) = (x + 1)^3$$

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State the domain of each.

1)  $s + j$

2)  $r \circ c$

3)  $\frac{c}{r}$

4)  $g \circ p$

Evaluate each of the following

5)  $(r \cdot c)(x)$

6)  $\left(\frac{f}{r}\right)(x)$

7)  $(g - r)(x)$

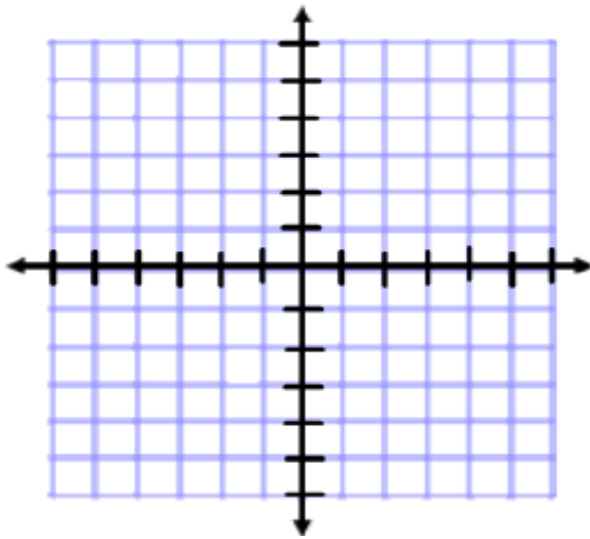
8)  $(j + d)(x)$

Answer each of the following Questions.

9). Using the function  $f(x) = \frac{2}{3}x - 1$

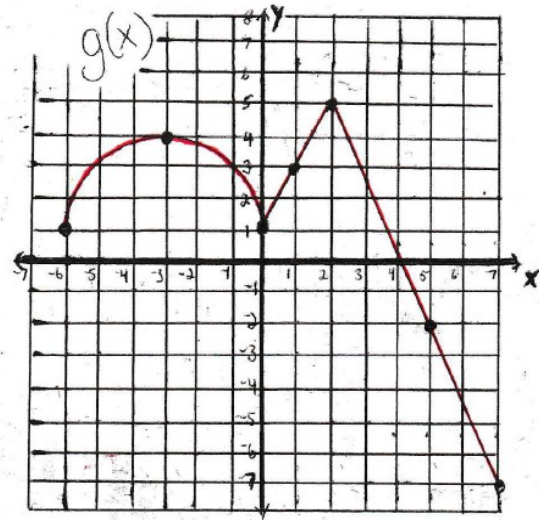
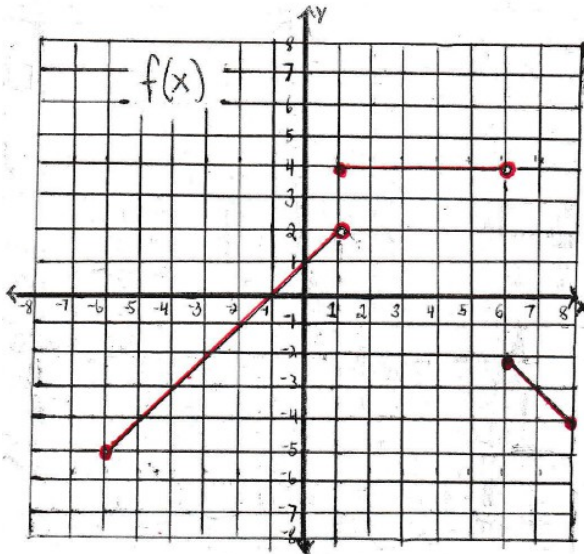
a) What is the equation of  $f^{-1}$  ?

b) Graph  $f$  and  $f^{-1}$  on the provided coordinate system (labeling each).



10) Determine if the functions  $n(x) = \frac{4-x}{5}$  and  $m(x) = 4+5x$  are inverses of each other using compositions.

Use the graphs to evaluate the following.



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

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

Use  $f(1)=4, f(-3)=2, f(2)=0, f(0)=-1$  and  $g(-1)=2, g(0)=1, g(5)=-3, g(2)=4$  to answer.

13)  $(f \circ g)(0) = \underline{\hspace{2cm}}$

14)  $(g \circ f)(2) = \underline{\hspace{2cm}}$

15)  $(f \circ f \circ g)(-1) = \underline{\hspace{2cm}}$

16)  $(f \circ g)(5) = \underline{\hspace{2cm}}$