Use these functions to answer problems 1-8

$$c(x) = -x + 6 \qquad p(x) = \sqrt{4+x} \qquad d(x) = \frac{4}{x-2} \qquad f(x) = \frac{1}{x^2 - 7}$$

$$g(x) = 5x^2 \qquad j(x) = \frac{3x-2}{x+1} \qquad r(x) = 2x - 6 \qquad s(x) = (x-8)^3$$

State the domain of each.

1) $s + j$

2) $r \circ c$

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

4) $g \circ p$

Evaluate each of the following

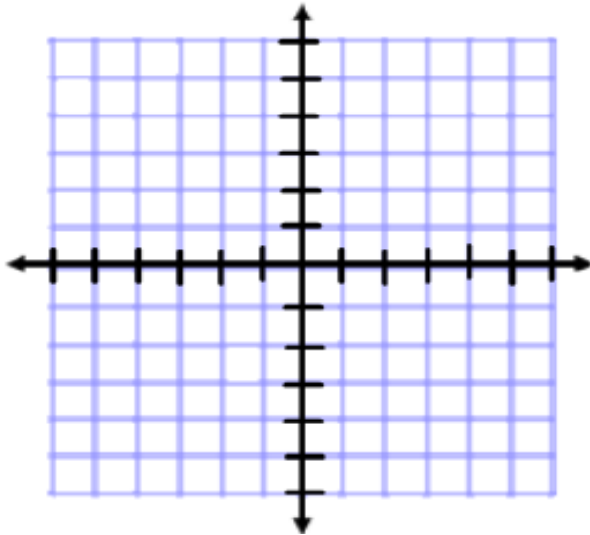5) $(r \cdot c)(x)$

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

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

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

Answer each of the following Questions.

9). Using the function $f(x)=\dfrac{5}{4}x-3$

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 $n(x)=\dfrac{3-x}{2}$ and $m(x)=3+2x$ are inverses of each other using compositions.