

Mathematics 20P

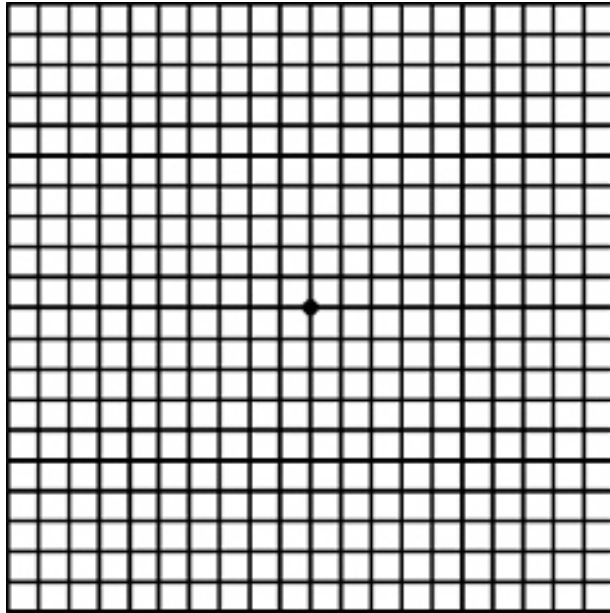
UNIT 2- Functions

ASSIGNMENT 2 due: Friday September 26th Period 5
(Show all working)

1) A relation can be described by the ordered pairs:
 $\{(-4, 1), (0, 4), (2, 1)\}$

a) Describe the inverse of the relation using ordered pairs

b) Plot the two relations on the graph



c) Is the original relation a function?
Why?

d) Is the inverse relation a function?
Why?

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2) A function can be described by the relation $f(x) = 4x - 8$.

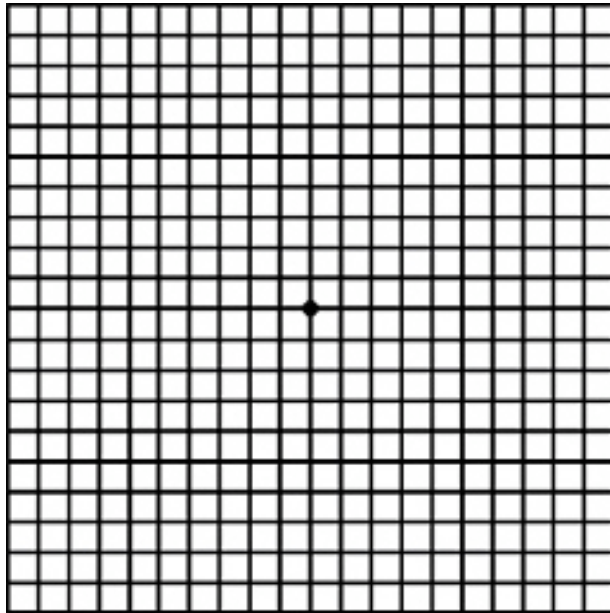
a) Find $f^{-1}(x)$.

b) Is $f^{-1}(x)$ also a function?

Why?

3) A function is described by the relation $f(x) = x^2 + 3$

a) Graph the relation



b) Find $f^{-1}(x)$.

c) Graph $f^{-1}(x)$ and give domain restrictions.

d) Is $f^{-1}(x)$ also a function?

Why?

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4) Using the function $f(x) = 4x + 4$ show that $(f \circ f^{-1})(x) = (f^{-1} \circ f)(x)$

5) The functions f and g are defined as $f(x) = 3x - 6$ and $g(x) = 2x$

a) Determine $f^{-1}(x)$ and $g^{-1}(x)$

b) Find the expression for

i) $(g^{-1} \circ f^{-1})(x)$

ii) $(f^{-1} \circ g^{-1})(x)$

iii) $(g \circ f)^{-1}(x)$