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MAC 1105.1A26
Cyr

Quiz 7
You must show all work to receive full credit!!

Problem 1. (4 pts) Consider the relation given by the equation $y = \sqrt{x+4}$.
(a) Find the domain and range of the relation.

Domain: need $x+4 \geq 0$
$\Rightarrow x \geq -4$

$[-4, \infty)$

Range: can get any non-negative number

$[0, \infty)$

(b) Determine whether the relation is a function.

Yes (only one output for every x-value in domain)

(c) Find the x- and y-intercepts of the graph of the equation.

$y=0$: $0 = \sqrt{x+4}$
$0 = x+4$
$x = -4$
$\boxed{(-4, 0)}$ x-intercept

$x=0$: $y = \sqrt{0+4}$
$y = \sqrt{4}$
$y = 2$
$\boxed{(0, 2)}$ y-intercept

(d) Find the distance between the intercepts in part (c).

$d = \sqrt{(x_2-x_1)^2 + (y_2-y_1)^2}$
$= \sqrt{(0+(+4))^2 + (2-0)^2}$
$= \sqrt{16+4} = \sqrt{20}$
$= \boxed{2\sqrt{5}}$

Problem 2. (1 pt) Write the center-radius form of the equation of the circle with center $(-1, 3)$ and radius 4.

$(x+1)^2 + (y-3)^2 = 16$