

## Functions (Part 2): Domain and Range

### Section 1: Domain and range from a graph (KA link)

1. State, in interval notation,

a. The domain of  $h$ .

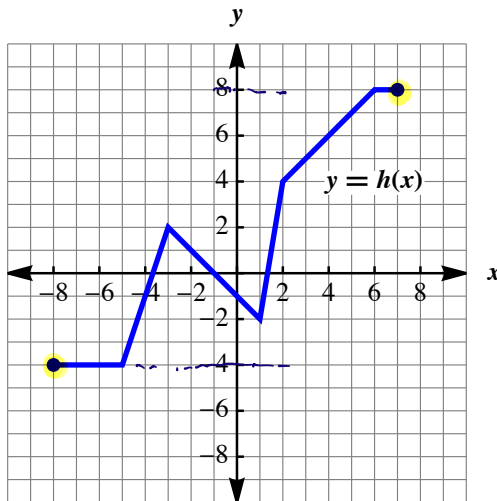
$[-8, 7]$

$[-8, 7]$

b. The range of  $h$ .

$[-4, 8]$

$[-4, 8]$



2. [Challenge] State, in interval notation,

a. The domain of  $g$ .

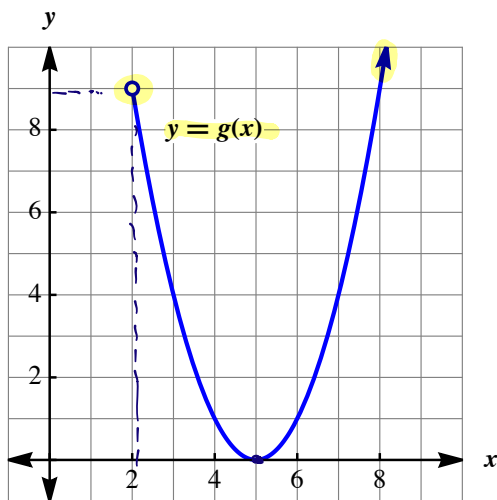
$(2, \infty)$

$(2, \infty)$

b. The range of  $g$ .

$[0, \infty)$

$[0, \infty)$



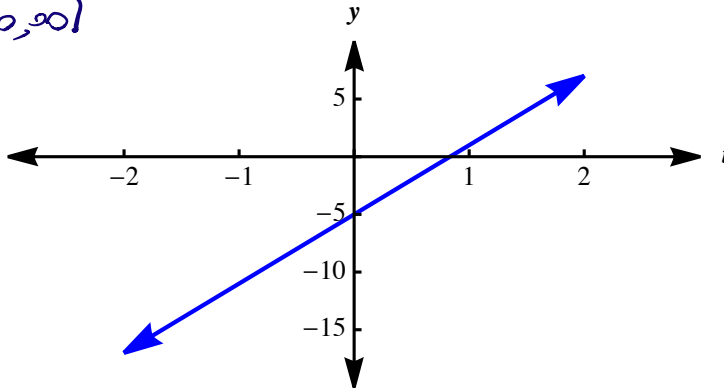
**Section 2: Determine the domain of functions (KA link)**

1. State the domain of the following functions using interval notation:

a.  $f(t) = 6t - 5$

Domain:  $(-\infty, \infty)$

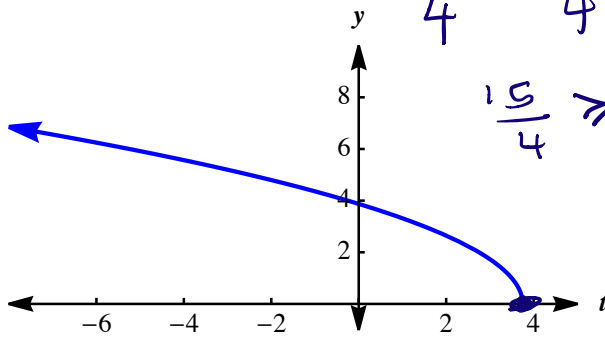
$(-\infty, \infty)$



b.  $g(x) = \sqrt{15 - 4x}$

Domain:  $(-\infty, 15/4]$

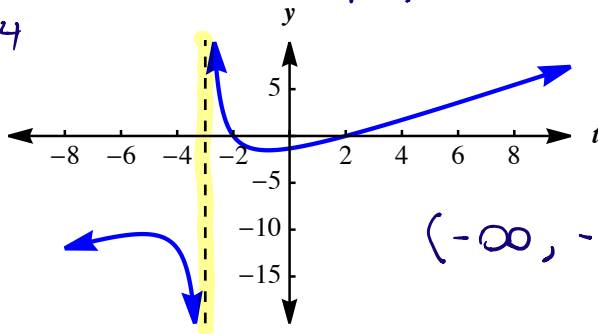
$15 - 4x \geq 0$   
 $15 \geq 4x$   
 $\frac{15}{4} \geq x$



c.  $h(r) = \frac{r^2 - 4}{r + 3}$

$r + 3 \neq 0$   
 $r \neq -3$

$f(x) = x^2 - 4$



$(-\infty, -3) \cup (-3, \infty)$

2. [Challenge] State the domain of the following functions using interval notation:

a.  $f(x) = mx + b$

$(-\infty, \infty)$

b.  $g(x) = \sqrt{x^2 - 4}$

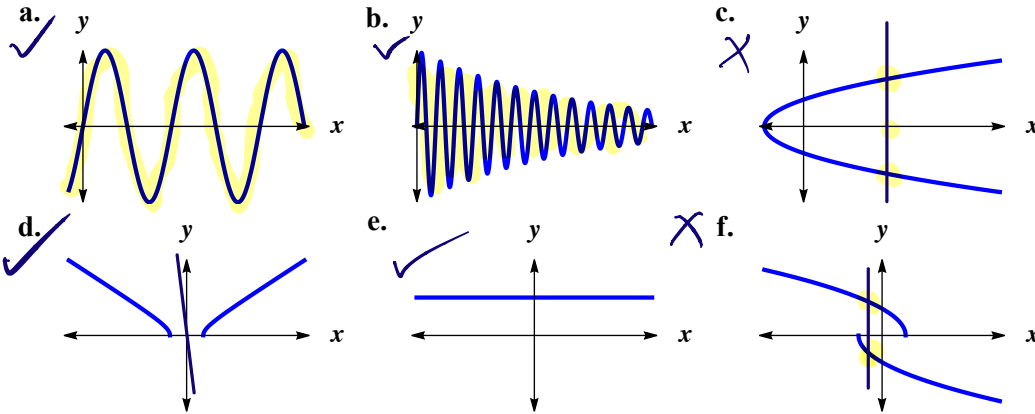
$x^2 - 4 \geq 0$   
 $\frac{x^2 - 4}{+4} \geq \frac{0}{+4}$   
 $\pm \sqrt{x^2} \geq \pm \sqrt{4}$   
 $\pm x \geq \pm 2$

$x \geq 2$   
 $-x \geq 2$   
 $\frac{-x}{+x} \geq \frac{2}{+x}$   
 $0 \geq \frac{2+x}{-2}$   
 $-2 \geq x$

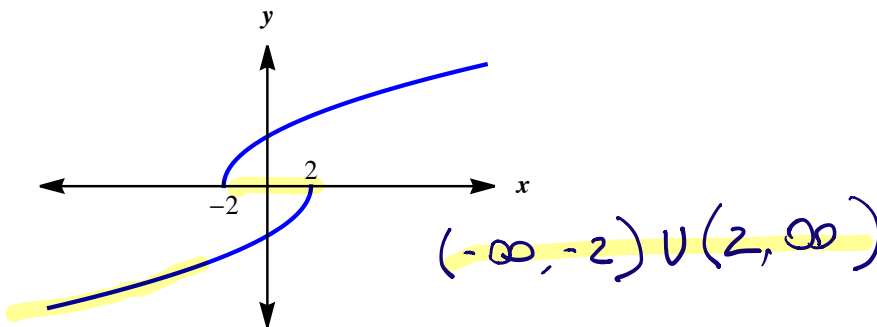
$(-\infty, -2] \cup [2, \infty)$  ✓

### Section 3: Recognize functions from graphs (KA link)

1. Which of the following graphs represent a function?



2. [Challenge] Restrict the domain of the following graph so that it represents a function (write the domain using interval notation).



### Section 4: Recognize functions from tables (KA link)

1. Make as few changes as possible to the table below so the weight of person (in lbs) is a function of their height (in inches).

Height	Weight
60	105
72	180
58	<del>110</del>
74	180
59	103
58	<del>112</del>
72	180
67	159