

Check for Mistakes in this Word Problem: target-leap

Directions: Write a function which takes in the target's x-coordinate and makes a player leap by returning an x-coordinate that is double the original x-coordinate.

Contract and Purpose Statement

Every contract has three parts ...

; target-leap : number → number
function name domain range

; Takes the x-coordinate and returns a new one, multiplied by 2
what does the function do?

Examples

Write some examples of your function in action...

(EXAMPLE(target-leap 100) (200))
function name input(s) what the function produces

(EXAMPLE(target-leap 40) (200))
function name input(s) what the function produces

Definition

Write the definition, giving variable names to all your input values...

(define(leap x-coor)
function name variables
(* x 5))
what the function does with those variables

Check for Mistakes in this Word Problem: circle-area

Directions: Write a function that returns the area of a circle given its diameter.

Contract and Purpose Statement

Every contract has three parts ...

; circle-area : number → number
function name domain range

; Given the diameter, multiply pi by radius squared to get the area
what does the function do?

Examples

Write some examples of your function in action...

(EXAMPLE(circle-area 10) (* (sqr (/ 10 2)) pi))
function name input(s) what the function produces

(EXAMPLE(circle-area 50) (* (sqr (/ 50 2)) pi))
function name input(s) what the function produces

Definition

Write the definition, giving variable names to all your input values...

(define(area diameter)
function name variables

(* (sqr diameter) pi)
what the function does with those variables

Check for Mistakes in this Word Problem: check-total

Directions: It is customary to tip 20% on a bill at a restaurant. Write a function that takes the total cost of the food and returns the new total including tip.

Contract and Purpose Statement

Every contract has three parts ...

; check-total : number \rightarrow number
function name domain range

; Returns the total of a check with 20% of the cost added
what does the function do?

Examples

Write some examples of your function in action...

(EXAMPLE((total 20)) (20 (+ (0.2 * 20) 20)))
function name input(s) what the function produces

(EXAMPLE((total 56.67)))
function name input(s)

(56.67 (+ (0.2 * 56.67) 56.67)))
what the function produces

Definition

Write the definition, giving variable names to all your input values...

(define(check-total food-total)
function name variables

(* (+ 0.2 food-total) food-total))
what the function does with those variables

Check for Mistakes in this Word Problem: enough-carpet?

Directions: You have 100 square feet of carpet to put down in your room. Write a function that takes in the length and width of your room and returns true if you have enough carpet and false if you don't.

Contract and Purpose Statement

Every contract has three parts ...

<code>; enough-carpet?</code>	<code>:</code>	<code>number number</code>	<code>→</code>	<code>number</code>
<hr/>		<hr/>		<hr/>
<i>function name</i>		<i>domain</i>		<i>range</i>

<code>; Given length and width of a room, is the area</code>	<code><=</code>	<code>100 sq feet?</code>
<hr/>		
<i>what does the function do?</i>		

Examples

Write some examples of your function in action...

<code>(EXAMPLE(enough-carpet?</code>	<code>(10 15)</code>	<code>)</code>	<code>(=< (* 10 15) 100)</code>	<code>)</code>
<hr/>	<hr/>		<hr/>	<hr/>
<i>function name</i>	<i>input(s)</i>		<i>what the function produces</i>	

<code>(EXAMPLE(enough-carpet?</code>	<code>(9 10)</code>	<code>)</code>	<code>(=< (* 9 10) 100)</code>	<code>)</code>
<hr/>	<hr/>		<hr/>	<hr/>
<i>function name</i>	<i>input(s)</i>		<i>what the function produces</i>	

Definition

Write the definition, giving variable names to all your input values...

<code>(define(enough-carpet?</code>	<code>length width</code>	<code>)</code>
<hr/>	<hr/>	
<i>function name</i>	<i>variables</i>	

<code>(=< (* length width) 100)</code>	<code>)</code>
<hr/>	
<i>what the function does with those variables</i>	

Check for Mistakes in this Word Problem: flower-name

Directions: You are putting together a list of flowers in your garden based on their color. You have red roses, purple tulips, and yellow daisies. Write a function that takes in the color of a flower and returns the name of the flower.

Contract and Purpose Statement

Every contract has three parts ...

```
; flower-name : string → string
  function name   domain      range
; Takes the name of the flower and returns its color
  what does the function do?
```

Examples

Write some examples of your function in action...

```
(EXAMPLE( flower-name "red" ) "rose" )
  function name   input(s)      what the function produces
(EXAMPLE( flower-name "tulip" ) "purple" )
  function name   input(s)      what the function produces
(EXAMPLE( flower-name "yellow" ) "daisy" )
  function name   input(s)      what the function produces
```

Definition

Write the definition, giving variable names to all your input values...

```
(define( flower-name color )
  function name   variables
  (cond
    [(string=? color "red") "rose" ]
    [(string=? color "purple") "tulip" ]
    [(string=? color "yellow") "daisy" ]
    [else
     "That flower isn't in the garden!" ]))
```

Check for Mistakes in this Word Problem: scale-image

Directions: Write a function which takes an image and a string, representing what to scale the image by. The function should return a smaller image if the string is 'smaller' and a bigger image if the string is 'bigger'.

Contract and Purpose Statement

Every contract has three parts ...

```
; scale-image : image string → image
   function name           domain           range

; Make the image bigger or smaller, depending on the given string
   what does the function do?
```

Examples

Write some examples of your function in action...

```
(EXAMPLE( scale-image (circle 5 "solid" "red") "bigger" )
          function name           input(s)
          (circle 10 "solid" "red") )
          what the function produces
```

```
(EXAMPLE( scale-triangle (triangle 20 "solid" "blue") "smaller" )
          function name           input(s)
          (triangle 10 "solid" "blue") )
          what the function produces
```

Definition

Write the definition, giving variable names to all your input values...

```
(define( scale-image original-image scale-factor )
        function name           variables
  (cond
    [(string=? scale-factor "bigger") (scale 2 original-image) ]
    [(string=? scale-factor "smaller") (scale 0.5 original-image) ]
    [else original-image ]))
```