Directions: Write a function that takes 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 Stateme	ent					
Every contract has three parts						
;target-leap :	Number -> Number				Number	
function name	domain			range		
; Takes the x-coordinate and re	eturns a new one, n	nultipli	ied by 2.			
	wha	t does the	function do?			
Examples						
Write some examples, then circle and labe	l what changes					
(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	variable(s)					
(* x 5))

Directions: Write a function, offscreen?, which returns true is Sam the butterfly's x-coordinate is less than -50 or greater than 690.

Contract and Purpose Stater	ment					
Every contract has three parts						
; offscreen? :	N	lumb	per	->	Boolean	
function name	domain range		range			
; Given an x-coordinate, retur	ns true if the coordina	te is	s less than -50			
	what de	es the	function do?			
Examples						
Write some examples, then circle and la	bel what changes					
(EXAMPLE (offscreen?	60)	true)
function name	input(s)		what the function produces			
(EXAMPLE (offscreen?	800)	false)
function name	input(s)		what the function produces			
Definition						
Write the definition, giving variable nam	es to all your input values					
(define (off-screen	x-coord)					
function name	variable(s)					
(and ($< x$ -coord -50)	(> x-coord 690)))

Directions: All students are given five (5) pencils at the beginning of the school year. Write a function called calc-pencils that takes in the number of students in the school and calculates the number of pencils needed for that school.

Contract and Purpose Stateme	nt				
Every contract has three parts					
;calc-pencils :		Numb	er	-> Num	ber
function name		domain		rai	nge
; Takes a number of students a	nd gives the numbe	r of	pencils		
	what	does the j	function do?		
Examples					
Write some examples, then circle and label	what changes				
(EXAMPLE (calc-pencils	100)	(* 100 5))
function name	input(s)		what the function produces		
(EXAMPLE (calc-pencils	40)	(* 40 6))
function name	input(s)		what the function produces		
Definition					
Write the definition, giving variable names	o all your input values				
(define (calculate-pencils	s р)			
function name	variable(s)				
(* p 5))

Contract and Purpose	e Statement					
Every contract has three parts						
;circle-area :		Numb	er	->	Number	
function name		domain			range	
; Given the diameter,	multiply pi by radius square	d to g	et the area			
	wh	at does the f	function do?			
Examples						
Write some examples, then cir	cle and label what changes					
			(* (sqr (/ 10 2))			
(EXAMPLE (circle-a	rea 10)	pi))
function	name input(s)		(* (SQ Fat the filmetic Doodu Zes))			
(EXAMPLE (circle-a	irea 50)	pi))
Definition function	name input(s)		what the function produces			
Write the definition, giving var	iable names to all your input values					
(define (area	diameter)					
function na	me variable(s)					
(* (sqr diamete	er) pi))	
	what the funct	tion does wii	th those variable(s)			

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

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

; check-total : Number -> Number finction name domain range ; Returns the total of a check with 20% of the cost added what does the function do? Examples Write some examples, then circle and label what changes + (0.2 * 20) (EXAMPLE (total 20) 20) function name input(s) + ((0.7)2 function for function produces Write the definition, giving variable names to all your input values (define (check-total food-total) function name variable(s) (* (+ 0.2 food-total)) food-total)	Every contract has three parts						
; Returns the total of a check with 20% of the cost added what does the function do? Examples Write some examples, then circle and label what changes + (0.2 * 20) (EXAMPLE (total 20) 20 + (v0.1/2 function name input(s)) + (v0.1/2 function polices) (EXAMPLE (total 56.67) 56.67) Definition function name input(s) what the function produces Write the definition, giving variable names to all your input values (define (check-total food-total) function name variable(s)	; check-total :		Numb	per	->	Number	
	function name		domain		range		
	; Returns the total of a chec	k with 20% of the cos	st ad	lded			
Write some examples, then circle and label what changes $ + (0.2 * 20) $ $(EXAMPLE (total 20) 20 + (Notal 2 function name input(s)) + (Notal 2 function 56 for 56) $ $(EXAMPLE (total 56.67)) 56.67 $ $Definition function name input(s) what the function produces$ $Write the definition, giving variable names to all your input values $ $(define (check-total food-total) $ $function name variable(s)$		what o	does the	function do?			
$(\text{EXAMPLE (total} 20) \\ \frac{1}{\text{function name}} \\ \frac{1}{\text{input(s)}} \\) & 20 \\ + \\ \sqrt{0! \text{ plantion 56w 67}} \\) \\ \text{(EXAMPLE (total 56.67))} \\ \text{Definition} \\ \text{function name} \\ \text{input(s)} \\ \text{what the function produces} \\ \\ \text{Write the definition, giving variable names to all your input values}} \\ \text{(define (check-total food-total))} \\ \frac{1}{\text{function name}} \\ \text{variable(s)} \\ \text{(define (solution name)} \\ \text{variable(s)} \\ \text{(define (solution name)} \\ (define (soluti$	Examples						
$(\text{EXAMPLE} \ (\ \ \text{total} \ \ 20 \ \) \ \ 20 \ \) \ \ 20 \ \) \ \ \\ (\text{EXAMPLE} \ (\ \text{total} \ \ 56.67 \ \) \ \ 56.67 \ \) \ \ 56.67 \ \) \ \) \ \ \\ (\text{EXAMPLE} \ (\ \text{total} \ \ 56.67 \ \) \ \ 56.67 \ \) \ \) \ \ \\ (\text{Definition} \ \ \text{function name} \ \ \text{input(s)} \ \ \text{what the function produces} \ \) \ \ \\ (\text{define} \ (\ \text{check-total} \ \ \text{food-total} \) \ \ \text{function name} \ \ \text{variable(s)} \ \) \ \ $	Write some examples, then circle and la	bel what changes					
function name input(s) + (10 t/12 fun*tion 56 uc67) (EXAMPLE (total 56.67)) 56.67 Definition function name input(s) what the function produces Write the definition, giving variable names to all your input values (define (check-total food-total) function name variable(s)				+ (0.2 * 20)			
(EXAMPLE (total 56.67)) 56.67) Definition function name input(s) what the function produces Write the definition, giving variable names to all your input values (define (check-total food-total) function name variable(s)	(EXAMPLE (total	20)	20)
Definition function name input(s) what the function produces Write the definition, giving variable names to all your input values (define (check-total food-total) function name variable(s)	function name	input(s)		+ (101 112 function 56467)			
Write the definition, giving variable names to all your input values (define (check-total food-total) function name variable(s)	(EXAMPLE (total	56.67)	56.67)
(define (check-total food-total) function name variable(s)	Definition function name	input(s)		what the function produces			
function name variable(s)	Write the definition, giving variable nan	nes to all your input values					
	(define (check-total	food-total)					
(* (+ 0 2 food-total) food-total)	function name	variable(s)					
((. 5.2 1554 5544) 1554 5544)	(* (+ 0.2 food-total	.) food-total)					_)

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 Stateme	ent.				
Every contract has three parts					
; enough-carpet?:	Numbe	er Number	->	Number	
function name	don	omain		range	
; Given length and width of a	room, is the area <= 3	100 sq feet?			
	what does	es the function do?			
Examples					
Write some examples, then circle and labe	l what changes				
(EXAMPLE (enough-carpet?	(10 15)) (< (* 10 15) 100))
function name	input(s)	what the function produces			
(EXAMPLE (enough-carpet?	(9 10)) (< (* 9 10) 100))
function name	input(s)	what the function produces			
Definition					
Write the definition, giving variable names	to all your input values				
(define (enough-carpet?	length width)				
function name	variable(s)				
(< (* length width) 1	.00)				_)

Directions: You go to the store with \$1.50 in your pocket. Write a function that takes in the price of an item and returns true if you have enough money to buy the item and false if you do not.

Contract and Purpose Stateme	ent					
Every contract has three parts						
; enough-cash? :		Str	ing	->	Boolean	
function name		domain	1		range	
; Check to see if the item cos	ts less than 1.50					
	и	hat does the	function do?			
Examples						
Write some examples, then circle and labe	l what changes					
(EXAMPLE (enough-cash?	2.5)	(>= 1.5 2.5))
function name	input(s)		what the function produces			
(EXAMPLE (enough-cash?	9.0)	(< gum 150))
function name	input(s)		what the function produces			
Definition						
Write the definition, giving variable names	to all your input values					
(define (enough-cash?	item)					
function name	variable(s)					
(<= item 1.5))

Contract and Purpose State	ment		
Every contract has three parts			
;equal-length?:	String String	->	Boolean
function name	domain		range
; Given two strings, check if	they are the same length		
	what does the function do?		
Examples			
Write some examples, then circle and lo	abel what changes		
(EXAMPLE (equal-length?	"yes" "no")		
(EXAMPLE (Equal - Pength?) what it	es") (string-length "no")) He function produces input(s) og") (string-length "cat")))		
Definition	og") (string-length "cat"))) the function produces		
Write the definition, giving variable nar	· · ·		
(define (equal-length?	string1 string2)		
function name	variable(s)		
(=))
	what the function does with those variable(s)		

Directions: Write a function that takes in two strings and returns true if their lengths are equal and false otherwise.

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 Sta	tement						
Every contract has three parts							
;flower-name :		String			->	String	
function name		domain	domain			range	_
; Takes the name of the f	lower and returns its co	lor					
	wha	t does the f	function do?				
Examples							
Write some examples, then circle an	d label what changes						
(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	variable(s)						
(cond							
[(string=? color	"red")	"ro	se"]				
[(string=? color	"purple")	"tu	lip"]				
[<u>(string=?</u> color	"yellow")	"da	isy"]				
[else							
)) <u>"</u> That flower	isn't in the gar	den!'	ַ				

Directions: Names that are longer than 20 characters are considered long names. Write a function that takes in a person's name and returns true if it is a long name and false if it is not.

Contract and Purpose Statem	ent					П
Every contract has three parts						
;long-name? :	String		->	Boolean		
function name	domain			range		
; Check if a name is longer th	ıan 20 characters					
	what does the function d	lo?			,	
Examples						
Write some examples, then circle and lab	el what changes					
(EXAMPLE (long-name?	"John Joseph Jinglehe	imer Schmidt")				
function name (> (string=? "John Jo	seph Jingleheimer Schmid	t" string=? "Jos	Jaime	Juarez")		
(EXAMPLE (long-name?	"Jos Jaime Juarez") 1	<u>o)</u>))
Definition function name	nat the function produces input(s)	what the fun	action produces			
Write the definition, giving variable name	s to all your input values					
(define (long?	name)					
function name	variable(s)					
(< name 20))	

Directions: Write a function that 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 Pur	oose 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, th	en circle and label what changes			
(EXAMPLE (scale	e-image (circle 5 "solid" "red") "bigger")			
, , , , , , , , , , , , , , , , , , ,	nction name input(s)			
(EXAMPLE (Scale	solid" "red"()triangle 20 "solid" "blue") "smaller")			
	nction produces input(s)			
(triangle 10 Definition	"solid" "blue") function produces			
	unction produces og variable names to all your input values			
(define (scale-	image original-image scale-factor)			
func	tion name variable(s)			
(cond				
				
[(string=?	scale-factor "bigger") (scale 2 original-image)			
[<u>(string=?</u>	scale-factor "smaller")			
(scale	e 0.5 original-image] original-image			
[e <u>lse^{scate}</u>	original-image			
))				
	what the function does with these variable(s)			

Directions: Some states have different tax rates. New York is 8%, Pennsylvania is 3%, and Delaware is 0%. All other states are 5%. Write a function that takes in the price of an item and returns how much the tax will be on the item.

Contract and F	Purpose State	ement					
Every contract has th	hree parts						
; state-tax	:		String			Number	
function name			domain			range	
; Given the sta	te and an ite	em's price, return the	tax on	that item			
		wh	at does the	function do?			
Examples							
Write some example	s, then circle and	label what changes					
(EXAMPLE (ta	Х	Delaware)	(+ 0.0 price))
	function name	input(s)		what the function produces			
				(+ 0.05			
(EXAMPLE (ta	Х	Georgia)	price))
Definition	function name	input(s)		what the function produces			
Write the definition,	giving variable no	mes to all your input values					
(define (sta	te-tax	state price)					
	function name	variable(s)					
(cond							
L <u>(strin</u>	g=? state	"Pennsylvania")	(*	0.03 price)]			
F/-1-1-	. 2	HALL AVE AL HA		F/ ' 00 0			
L(Strin	g=? state	"New York")	(*	0.08 price <u>)</u>]			
[/ctrin	g_2 ctate	"Delaware")	(+	0 0 price 7			
L(Strtill	y=: State	Detaware)	(^	0.0 price)]			
[else			(*	0.05 price)]			
[2130							
))							
, ,							_

Directions: You will be late to class if you have to walk more than 25 pixels to get there. Write a function that takes in your x-coordinate and y-coordinate and the x-coordinate and y-coordinate of the classroom and returns true if you will be late to class and false if you will be on time.

and false if you wil	Il be on time.										
Contract and Pu	ırpose Statement										
Every contract has thre	ee parts										
; late-to-class?:		Number Number Number						->	Boolean		
function name	domain								range	_	
; Takes the coori	indates of my loca	ation and a	class	room	and	retui	rns true if the	e dista	ance is i	more than 25	
and false if it	is less than 25.										
Examples what does the function do?											
Write some examples,	then circle and label wh	at changes									
(EXAMPLE (late	e-to-class?	40	55)	(>	25	(distance	40	55)))
	function name	input(s))				what the function prod	uces			
(EXAMPLE (late	e-to-class?	40	55)	(<	25	(distance	40	55)))
	function name	input(s)			what the function produces						
Definition											
Write the definition, gi	ving variable names to a	all your input v	alues								
(define (late	-to-class? s	tudent-x	stud	lent-y	sc	hoo	l-x school	- y)			

function name variable(s)

< 25 (distance student-x student-y)