



APCS 2009-2010: Scratch Final Test Part I

1. Please match the vocab term to its definition. (10 points)

- \_\_\_ List → a. A variable that stores more than one value.
- \_\_\_ Mod → b. To make a "counter" variable go up in value.
- \_\_\_ Local → c. A variable that is shared by ALL sprites.
- \_\_\_ Increment → d. An operator that calculates a remainder.
- \_\_\_ Global → e. A variable that is limited to ONE sprite.

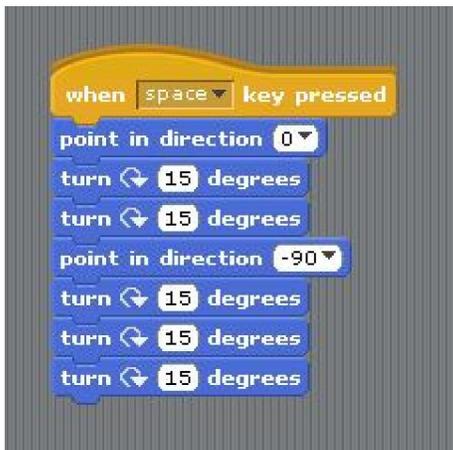
2. From the moment the green flag is clicked, how many seconds until the sprite reaches the location of (0,0)? (3 points)

```

when green flag clicked
  go to x: -100 y: -100
  wait 5 secs
  repeat until (x position = 0 and y position = 0)
    wait 3 secs
    change x by 10
    change y by 10
    
```

- 30
- 35
- 38
- 33

3. In what direction is the sprite pointing when this code is done executing? (3 points)



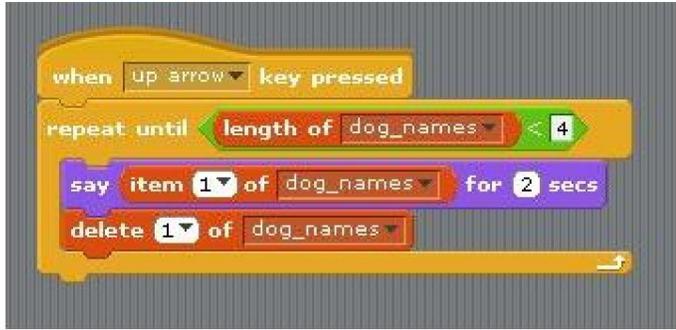
- 45
- 45
- 15
- 15

4. There's a tile missing that's needed to get this user input code to work. What's needed? (3 points)



- There needs to be a variable created called "name" and the tile "set name to answer" should be put in here.
- There needs to be a user input window so the tile "create input window" should be put in here.
- Nothing is needed. The code is fine.
- There needs to be an "answer" tile created, so the tile "create answer tile" should be put in here.

5. Look at the this code for a program that says dog names from a list. How many dog names will be said and which names will be said? (3 points)



- 1 name: Maggie
- 1 name: Digger
- 2 names: Maggie and Rufus
- 2 names: Digger and Rover

6. Here is a slight modification to the dog names program. How many dog names will be said and which names will be said? (3 points)



-   The code won't do anything.
- 1 name: Digger
- 2 names: Digger and Rover
- 2 names: Maggie and Rufus
- 1 name: Maggie

7. What will this code do? (3 points)

```

when down arrow key pressed
set list_index to 0
repeat until list_index > length of dog_names
change list_index by 1
if list_index mod 2 = 1
say item list_index of dog_names for 2 secs
    
```



- It will say Rover Rufus.
- It will say Digger Fido Maggie.
- It won't do anything.
- It will say Maggie Fido Digger.

8. What's missing from this code? (3 points)

```

when down_arrow key pressed
set no_hours to 0
set pay_rate to 0
set weekly_pay to 0
set no_overtimeHours to 0
set otime_pay to 0
set otime_payrate to 0
set regular_pay to 0
ask How many hours did you work this week? and wait
set no_hours to answer
ask How much do you make per hour? and wait
set pay_rate to answer
if no_hours > 40
set otime_payrate to pay_rate * 1.5
set regular_pay to 40 * pay_rate
set weekly_pay to regular_pay + otime_pay
say join You made join weekly_pay dollars this week for 2 secs
else
set weekly_pay to no_hours * pay_rate
say join You made join weekly_pay dollars this week for 2 secs

```

- A tile that takes user input and sets it to pay\_rate.
- A tile that calculates the otime\_payrate.
- A tile that calculates the otime\_pay.
- A user input box that asks for the number of hours worked.

9. What's wrong with the following code? (3 points)

```

when space key pressed
set total_bill to 0
set percentage to 0
set no_diners to 0
set per_person_bill to 0
ask "What is the total restaurant bill?" and wait
set total_bill to answer
ask "What percentage tip would you like to leave?" and wait
set tip_rate to answer / 100
ask "How many diners are there?" and wait
set no_diners to answer
say "I will now calculate your per person bill" for 2 secs
set per_person_bill to 0
say join "Each diner should pay" join per_person_bill "dollars" for 2 secs
    
```

- You need to ask the user to input the tip rate as a decimal so that the math works properly.
- total\_bill needs to be set to "answer"/100.
- The per\_person\_bill needs to be calculated with tip and multiplied by no\_diners.
- The per\_person\_bill needs to be calculated with tip and divided by no\_diners.

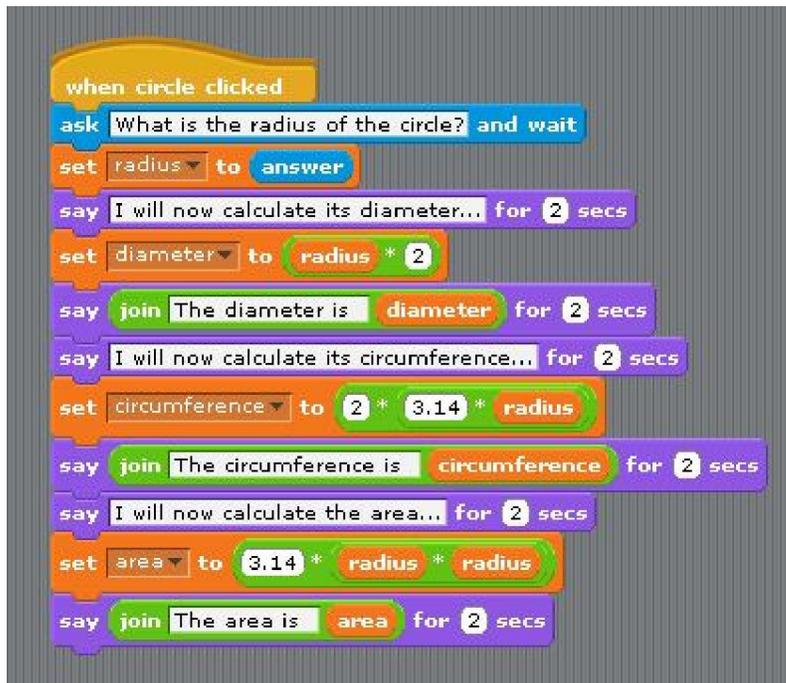
10. What's wrong with this code? (3 points)

```

when up_arrow key pressed
set gross_pay to 0
set net_pay to 0
ask "How much do you make per year before taxes?" and wait
set gross_pay to answer
say "I will now calculate your net pay, minus 24% taxes" for 2 secs
set net_pay to 0
say join "You'll take home" join net_pay "dollars this year." for 2 secs
    
```

- net\_pay needs to be calculated as (24% of gross\_pay) minus gross\_pay.
- net\_pay needs to be calculated as gross\_pay plus (24% of gross\_pay).
- net\_pay needs to be calculated as gross\_pay minus (24% of gross\_pay).
- There is nothing wrong with this code.

11. What's wrong with this code? (3 points)



```
when circle clicked
ask What is the radius of the circle? and wait
set radius to answer
say I will now calculate its diameter... for 2 secs
set diameter to radius * 2
say join The diameter is diameter for 2 secs
say I will now calculate its circumference... for 2 secs
set circumference to 2 * 3.14 * radius
say join The circumference is circumference for 2 secs
say I will now calculate the area... for 2 secs
set area to 3.14 * radius * radius
say join The area is area for 2 secs
```

- There should be a Boolean operator in the diameter calculation.
- There is nothing wrong with this code.
- Use the "square" tile instead of radius\*radius.
- You need to create user input variables for area and circumference.