Name: _____

EMSE 4571 / 6571: Quiz 2 (M)

Rules:

- Work alone; no outside help of any kind is allowed.
- No calculators, no notes, no books, no computers, no phones.

1. Short answers: 60 points (20 each)

a) What will the following code return?

```
sqrt(2*64^0.5)
```

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b) The code below will error. Describe why in one sentence.

```
sqrt(y = abs(-8))
```

The argument name is wrong. The argument name for the sqrt() function is x, not y.

c) Write one line of R code that allows you to use the `wiki_randomfact()` function from the `wikifacts` package *without* loading the entire package.

```
wikifacts::wiki_randomfact()
```

(Turn over for the last quiz question)

2. Turtle graphics: 40 points

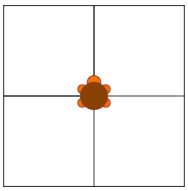
Consider the following commands from the `TurtleGraphics` package:

```
library(TurtleGraphics)

turtle_init()
turtle_move(distance = 20, direction = "forward")
turtle_move(distance = 40, direction = "backward")
turtle_reset()
turtle_turn(angle = 90, direction = "left")
turtle_move(distance = 20, direction = "forward")
turtle_move(distance = 40, direction = "backward")
turtle_turn(angle = 90, direction = "right")
turtle_move(distance = 20, direction = "forward")
turtle_turn(angle = 90, direction = "left")
turtle_move(distance = 40, direction = "forward")
turtle_turn(angle = 90, direction = "left")
turtle_move(distance = 40, direction = "forward")
turtle_turn(angle = 90, direction = "left")
turtle_move(distance = 40, direction = "forward")
turtle_turn(angle = 90, direction = "left")
turtle_move(distance = 20, direction = "forward")
turtle_reset()
```

In the box below, draw the shape that the turtle traces through when running the above code. The specific line segment lengths can be approximate, and you don't need to draw the turtle itself, only the shape the turtle traces.

Line segments can be approximate in length, but the general shape should look like this:



BONUS: 5 points

If x and y are both positive integers and x `<` y, what does x `%%` y equal?

x