ICS3U0 **Practice Test**

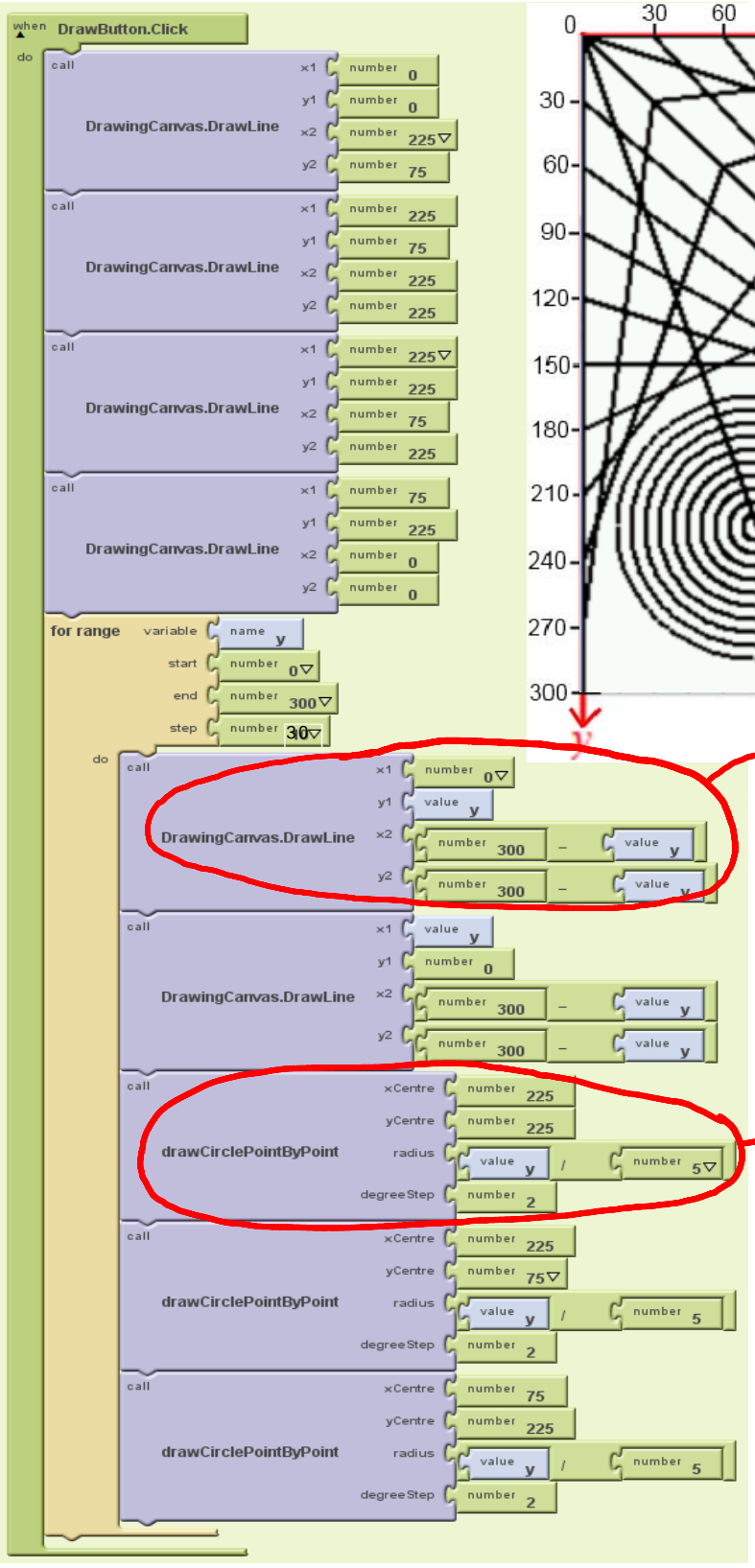
Grade 11 Computer and Information Science

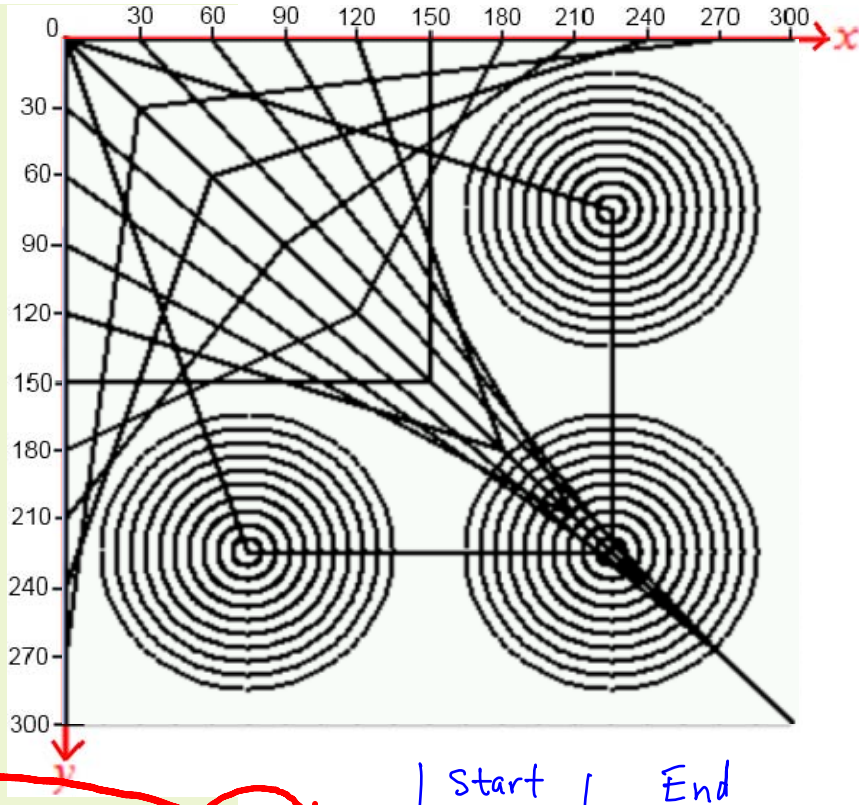
Solutions: Unit 1 – Practice Test – Line and Circle Drawing in App Inventor

Mr. N. Nolfi

Victim: Mr. Solutions

1. Use the provided grid to sketch the picture generated by the following App Inventor blocks:



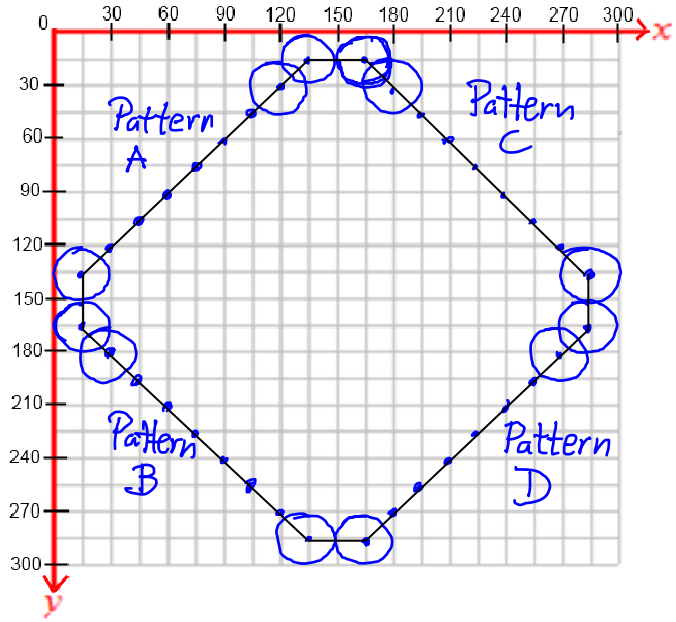


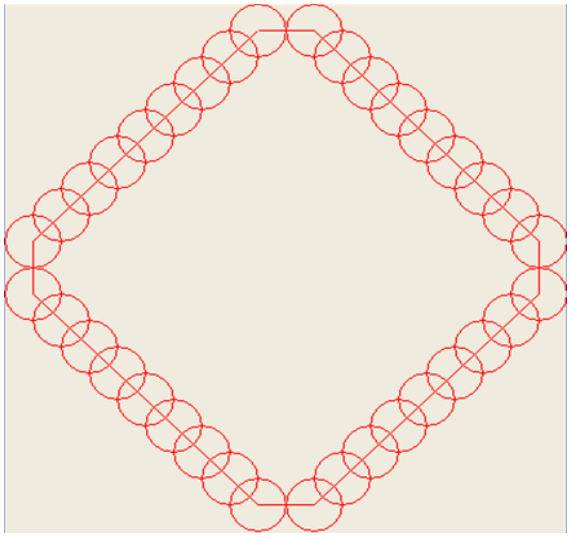
y	Start (0, y)	End (300 − y, 300 − y)
0	(0, 0)	(300, 300)
30	(0, 30)	(270, 270)
60	(0, 60)	(240, 240)
⋮	⋮	⋮
300	(0, 300)	(0, 0)

y	Centre	Radius y/5
0	(225, 225)	0
30	(225, 225)	6
60	(225, 225)	12
⋮	⋮	⋮
300	(225, 225)	60

2. Shown below is a drawing that consists entirely of circles and line segments on a canvas scaled to 300 pixels×300 pixels.

(a) Before you even consider putting together any App Inventor blocks, you should sketch a portion of this diagram. Use the grid to sketch ***enough lines and circles*** to allow you to ***spot patterns***. ***It is not necessary to sketch all t he shapes!***





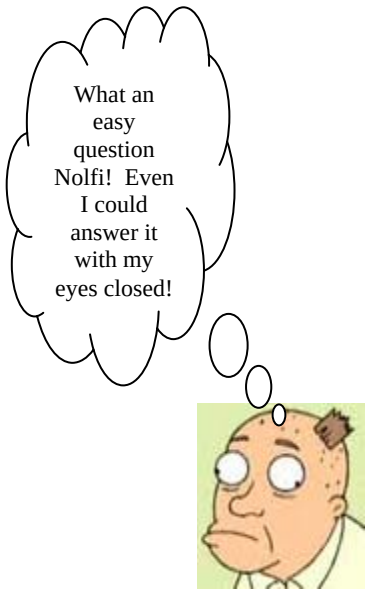
(b) Now complete the following tables of values. Once again, it is only necessary to include enough points to reveal a pattern!

Circles

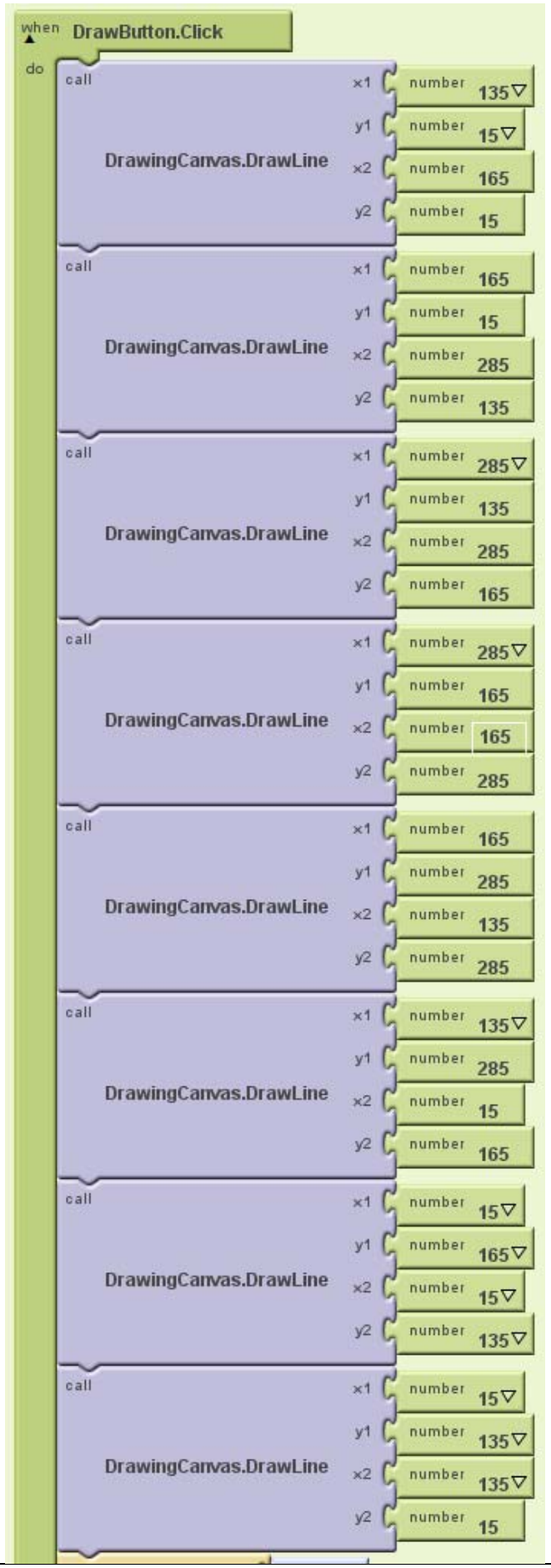
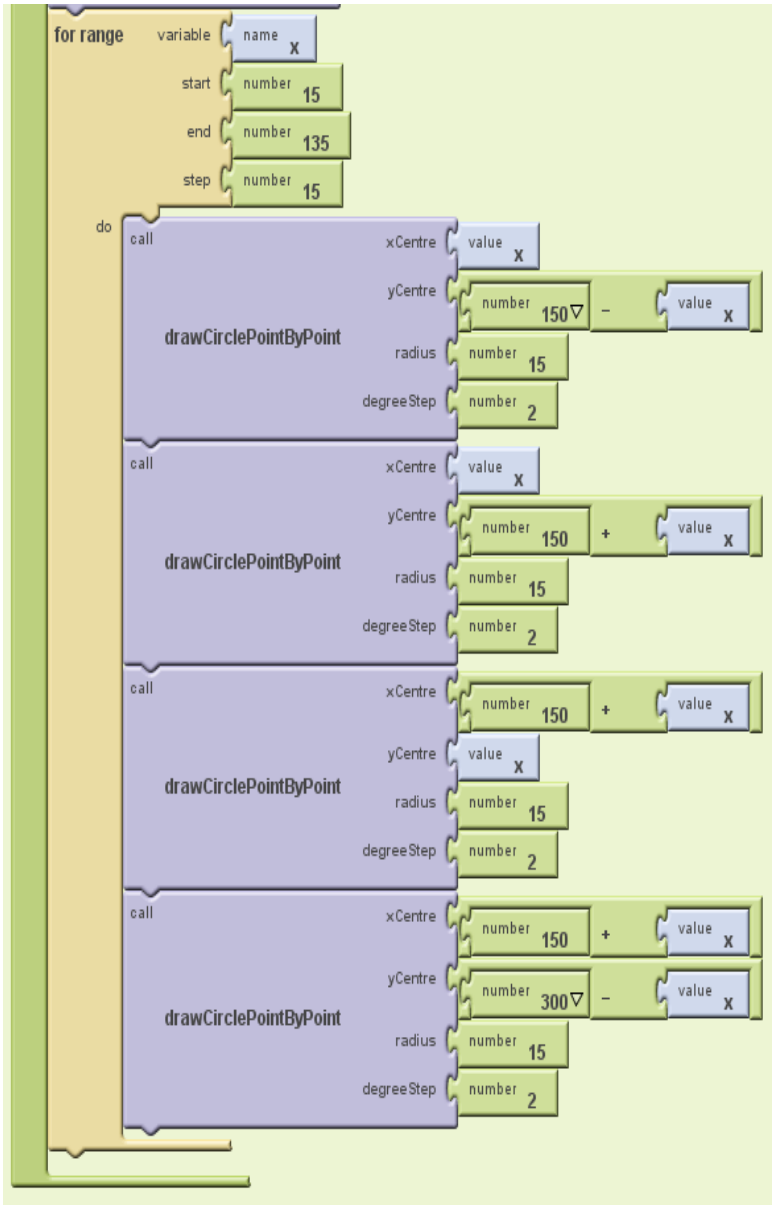
	Centre	Radius
Pattern A	(15, 135) (30, 120) (45, 105) ⋮ (X, 150−X)	15 ⋮
Pattern B	(15, 165) (30, 180) (45, 195) ⋮ (X, 150+X)	15 ⋮
Pattern C	(165, 15) (180, 30) (195, 45) ⋮ (150+X, X)	15 ⋮
Pattern D	(165, 285) (180, 270) (195, 255) ⋮ (150+X, 300−X)	15 ⋮

Lines

Start	End
(135, 15) (165, 15) (285, 135) (285, 165) etc. for remaining line segments	(165, 15) (285, 135) (285, 165) (165, 285)



(c) Now construct a series of App Inventor blocks that together, generate the drawing shown above. ***Note that you must use a loop whenever possible.***

See the next page for a solution to this problem. Note that the procedure block is split into two parts because it is too long to fit on one page.

The Part of the Procedure that Draws the Lines	The Part of the Procedure that Draws the Circles