(1)

Daniel McVicker
Jordan Quitmeyer

$$\frac{\text{Count Leaves}}{\text{Count Turtles}} \cdot \text{Count Patches}$$

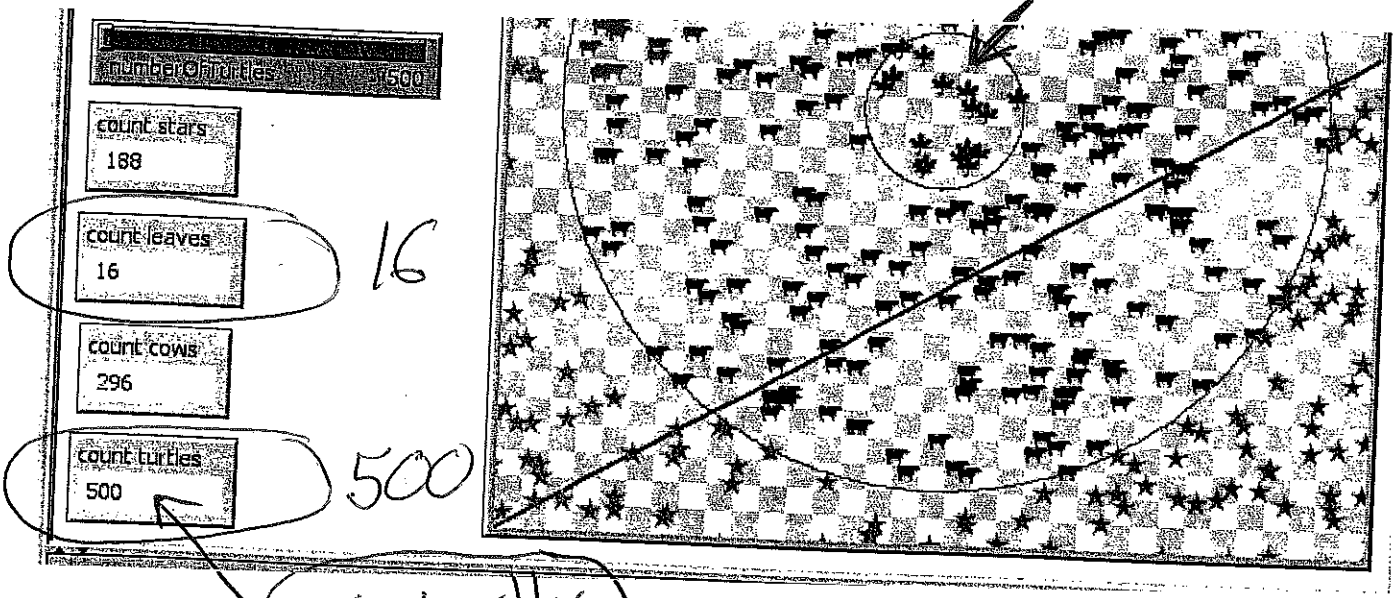
1. Area inside inner circle LEAVES 113.097 is probably NOT the answer!!!

$$= \frac{16}{500} \cdot 1089$$

$$= 34.85$$

$33 \times 33 = 1089$ patches

16 LEAVES



16

500

500 turtles

(2) Calvin Brown
Sawyer Phillips
Allison Knuckle

Area of Larger circle Cows and Leaves

$a = \frac{312}{500} 1089 = 679.5$

Cows = 296

leaves = 16

total = 312

$$\begin{array}{r} {\scriptstyle 1\ 1} \\ 296 \\ +\ 16 \\ \hline 312 \end{array}$$ cows and leaves

turtles = 500

patches = 1089 $= 33 \times 33$
$= 33^2 = 1,089$

$a = \frac{6}{c} d$

$a = \frac{312}{500} (1089)$

$a = 679.5$

(2.) Area of the outer larger circle COWS and LEAVES 530.929 is probably NOT the answer!!!!

(3)

Area = 3.14159 (r^2)

area = 3.14159 $(14.5)^2$

210.25 (3.14159) = a

a = 660.52

Cory Cypher
Gabbi Weeg

(3.) Area outside of the larger circle (STARS)

$a = \frac{b}{c} d$

b = Stars count = 188

c = turtles count = 500

$d = 33^2 = 33 \times 33 = 1089$

$a = \frac{188}{500}(1089) = (0.376)(1089)$

$= 409.464$

37.6% of turtles landed outside of the larger circle

$a = \frac{b}{c} = d$ 16+ 296 = 312

$a = \frac{312}{500}$ (d) $\frac{312}{500} = 0.624$

a = .64 (d) not 0.64

a = .64 (1089) $\frac{1089}{.64} = 1701.6$

see #2

or $a = 1089 - \left(\frac{312}{500}\right)(1089) = 1089 - 679.5$

$= (409.5)$

(3) $a \frac{b}{c} = d$

cows + leaves $296 + 16$

$a = \frac{312}{500} (1089)$

$a = .62 (1089)$

$a = 679.54$

area of Grid

$1089 - 679.54 \approx 409.46$ stars

4

Jon Hamilton
Nicholas Mladenic

```
To turnFarAwayCowsToStars
  ask turtles
  [
   setxy random-xcor random-ycor
   ifelse (distancexy 0 0) < innerCircleRadius
   [
     hatch-leaves 1 [set color blue set shape "leaf"]
     die
   ]
   [
     ifelse (distance xy 0 0) > outerCircleRadius
     [
       hatch-stars 1 [set color green set shape "star"]
       die
     ]
     [
       hatch-cows 1 [set color black set shape "cow"]
       die
     ]
   ]
  ]
End
```

if

else

4. Download the **MonteCarloCircles.nlogo** file and open it up in NetLogo. With your partner, work out the code to get the cows outside of the outer circle to be STAR shapes and STAR breeds. What was that code you put inside the **turnFarAwayCowsToStars NetLogo** PROCEDURE?

Ben Quinn
Clarine for
Table 3

(5) $a = \frac{B}{C}(V)$

inner Circle

#1 $\frac{16}{500}(1089) = 34.848$

DONUT area

(5.) Area of the donut, which is outer circle area – inner circle area. The COWS ONLY!!!!

$a = \frac{B}{C}(V)$

outer Circle

#2 $\frac{312}{500}(1089) = 679.536$

Subt. inner circle from outer Circle to find area of donut #5

34.848
-679.536 = 644.688 AREA OF DONUT

679.5 ← outer circle
−34.85 ← inner circle
644.65 ← donut

leaves = 16
Turtles = 500
patches = 1089
leaves + cows = 312

Or use cows count

$a = \frac{296}{500}(1089)$

$a = (.592)(1089) = 644.688$

Austin Monteiro + Anastasia Parsons

6 The die Statement functions as an organizational device that dictates which objects (cows, stars and leaves) 'live' within each defined confine.

(DistanceXY x x) defines the 'Kill Zone' for the specified objects

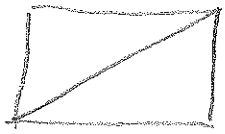
The die Statement in the DrawCircles operation is simply used for the structure of the circle — it has no effect on turtle XY coordinates.

The die statement causes a turtle obeying that command to eliminate itself.

In this application after a turtle has HATCHED one cow or leaf or star, we remove it, i.e. it dies.

6. What does the die statement do in the MonteCarloCircles.nlogo file? Take it out or comment it out with ;; and see what it does by noticing what is different in the output.

(7)



$\frac{33 \times 19}{2} = 313.5$

Will Pierce
Dylan Becker

66 turtle counted

$a = \frac{66}{500}(1089)$

$a = (0.132)(1089)$

$= (143.748)$

$33 \times 33 = 1089$

$\frac{313.5}{1089} = \frac{x}{660.18}$

$.29 \times 660.18 = x$

$x = 190.05$

Count the cows — See below — I counted 66 cows

(7.) Area below the line and inside the larger circle. Show your work and how you arrived at that result.