

h 8

w 16

Make Oval w width h height

MonteCarlo

howManyTurtles 1000

On Off SeePatches

count cows 254

count houses 746

count turtles 1000

count patches 1521

1st step:  
Make w by h  
Ellipse

2nd step:  
MonteCarlo  
button  
to get data for  
an area estimate  
of the oval.

ticks: 0 3D

8. Calculate the **Monte Carlo estimated area** of the above OVAL using what you have learned. Be sure to show ALL of your work, including the NUMERATOR and DENOMINATOR and the setup of any equation so that you not only demonstrate you understand the concept and relationships and equation, but so that if you make arithmetic errors in the calculations, you can still get most or all of the credit. COWS are inside the OVAL, and HOUSES are outside the OVAL.

h 10

w 10

Make Oval w width h height

MonteCarlo

howManyTurtles 100

On Off SeePatches

count cows  
33

count houses  
67

count turtles  
100

count patches  
1089

1st step:  
Make w by h  
Ellipse

2nd step:  
MonteCarlo  
button  
to get data for  
an area estimate  
of the oval.

ticks: 0 3D

9. Calculate the AREA of the entire turtle grid world in square patches. Show ALL your work, i.e. the numerator and denominator and the setup of your equation, to not only show your understanding of the concepts, but to get most or all of the credit if you make an arithmetic error in the calculations. Note that an OVAL with height = width, i.e.  $h = w = 10$ , as shown above, is a CIRCLE!