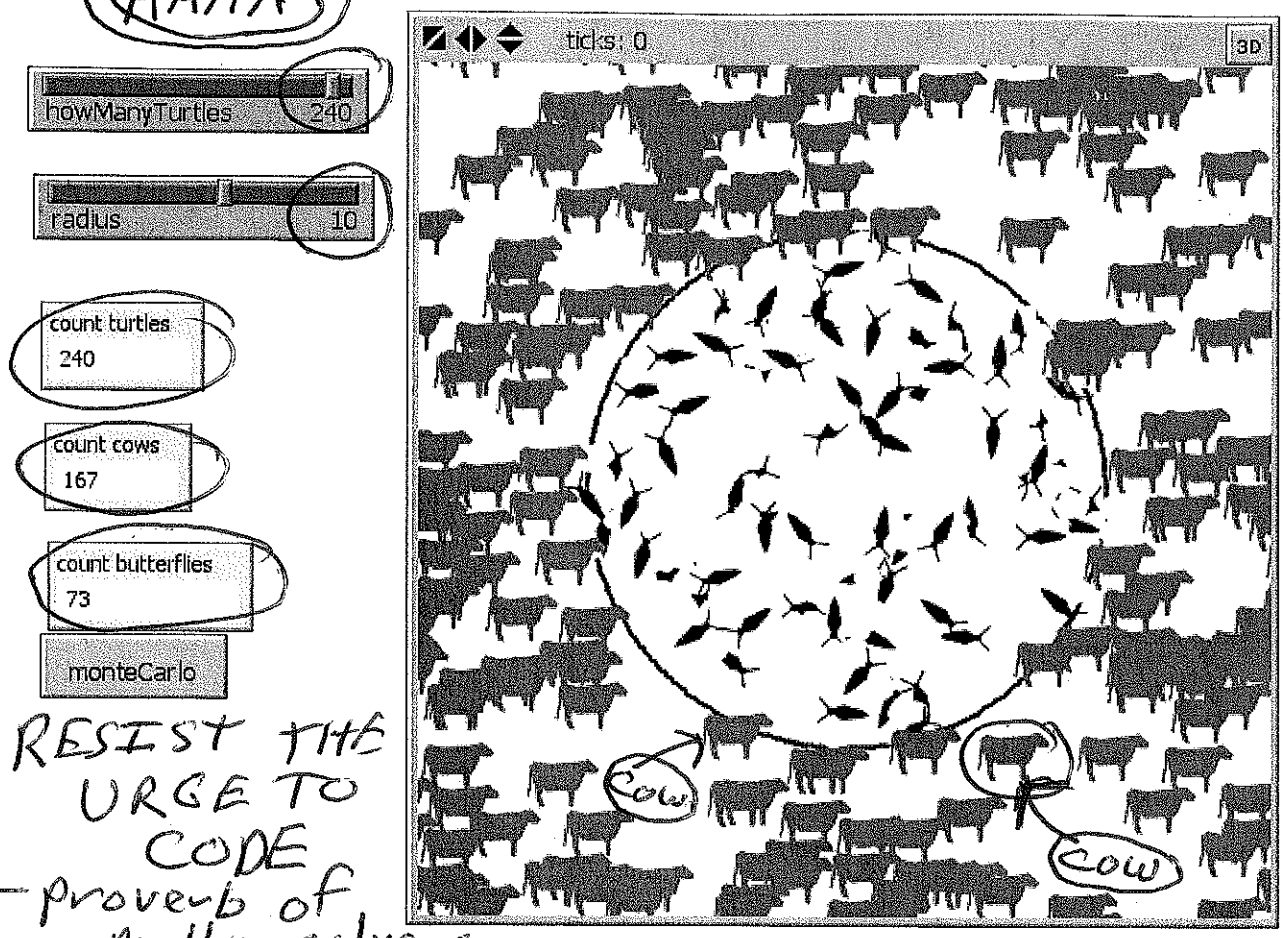
AAAA



RESIST THE URGE TO CODE
— proverb of problem solvers —

2. **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 the radius of the circle is 10! **Area of the circle formula is AREA = PI times Radius Squared.** **Radius is 10!** Use PI as 3.14 is accurate enough for PI. **VIP:** ***Show ALL your work. Work on scratch paper first, the neatly show your organized step by step solution to the problem here. Butterflies are INSIDE the CIRCLE and COWS are outside the circle.***

3 Phases of problem solving →

① Understand it, the WHAT

② PLAN it, develop the HOW.

③ Code it, solve it.

RESIST THE URGE TO CODE (too soon)

i. WHAT is given? WHAT is the goal? — Dr. Peter Venkman

ii. HOW to get from — Dr. Raymond Stantz
   i. given start to
   ii. the desired result or goal.

iii. Solve the problem using whatever tools (Netlogo, Vensim, calculator) and algebra you need to do. — Dr. Egon Spengler

(1) Understand it. (BBBB)

(i) WHAT is given? (I)

73 butterflies inside the circle —
167 cows outside circle
240 turtles total

Circle radius 10

WHAT

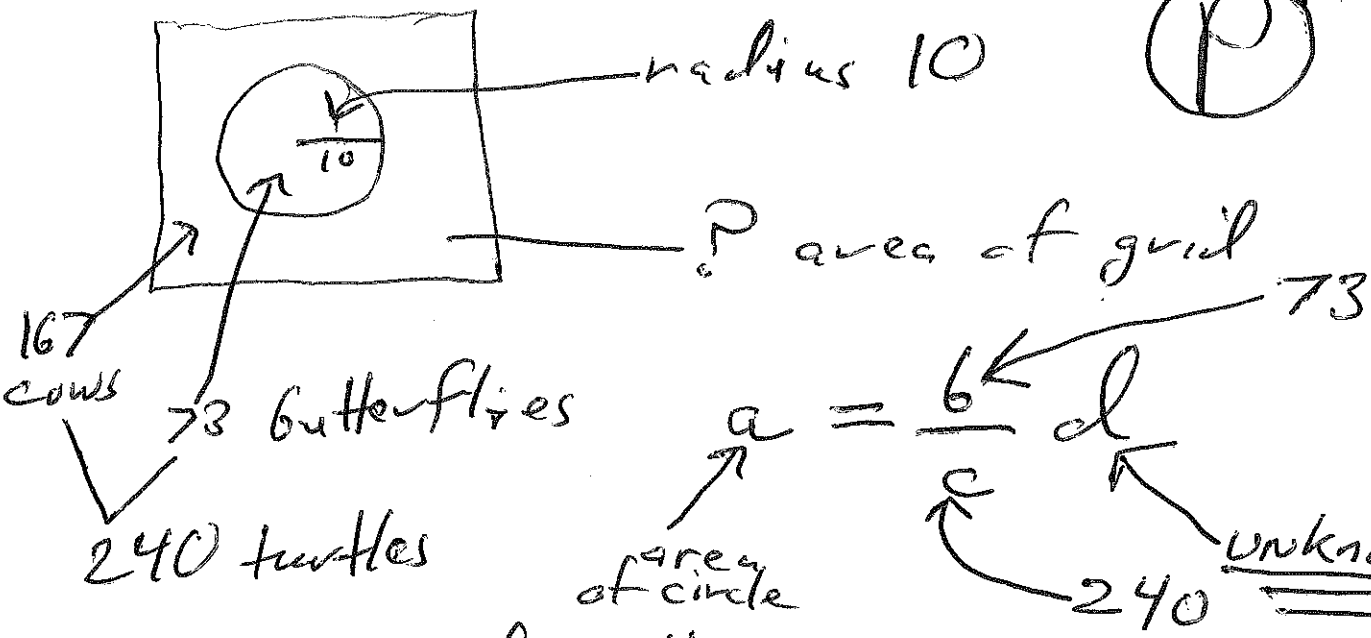
(ii) What is goal, what am I asked to find?

AREA of entire GRID in square patches. (O)

Unknown —

(2) HOW to get from (i) to (ii)

(P)



Oh, area of circle —

Need to know 3 out of 4,
we only know $b = 73$
and $c = 240$.

Cccc

d is our goal, see 1.ii.
and Peter Venkman
phase understanding
of the problem.

Oh, so if I need 3 out of 4,

$$\text{area of circle} = \frac{73}{240} d$$

Need this

$$\text{Area of circle} = \pi r^2$$

$$r = 10 = \text{radius}$$

$$\pi = pI = 3.14$$

$$a = (3.14)(10^2) = (3.14)(100)$$
$$= 314$$

$$a = \frac{b}{c} d \qquad 314 = \frac{73}{240} d \qquad 314 = (0.304) d$$

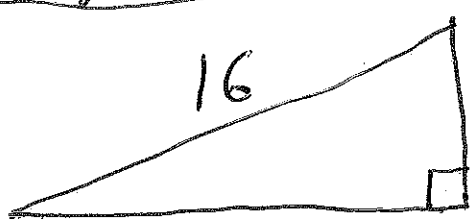
$d = \frac{314}{0.304}$

Note that .3 will go into 1 about 3 times, so it will go into 314 about 900 some times.

$d = 1032.89$

Area of GRID is estimated to be 1,032.89 patches.

Visually, it appears reasonable that the circle being 314 patches, the entire area being 1000+ patches makes sense.



13 is my y coor answer

5.9 is my x coor answer

Example where you SEE that your answer(s) make NO sense — somewhere you made a mistake — perhaps mixing up SOH and CAH.