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1) How do you know where to start with a problem such as this?

2) Is there a simpler way of explaining the steps to students?

3. How can you relate this to a real life scenario?

4. How can this be made personally meaningful and relevant to students?

5. In which math course would one solve a problem like this?

~~6. How do you make the variables come to life?~~

~~(How do you make this exist~~

~~6. Once you find the first~~.

6. Would knowing these coordinates aid a golfer who is trying to put the ball in the hole?

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(1) What high school classroom would you present this problem to? (Geometry? Algebra 2?)

(2) I've proved the pythagorean's equation with the given situation. (circle with r: 1 & y intercept at (0, t)). I know it will work for all reading's & given 't' as y-intercept and and can derive all equation's given except $t = \frac{b}{a+1}$. Where did that equation come from?

(3) To be rational, $a^2 + b^2$ must be r^2 where the $\sqrt{\ }$ = a rational #. or a whole ~~#~~ not a decimal. The question would be, are you talking about any other point or all other points (a, b)?

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1.) CONSIDERING A UNIT CIRCLE, USING THE EQUATION OF THE LINE & CIRCLE, WE PROVED THAT THE ENTRY/EXIT POINTS WOULD ALWAYS BE RATIONAL COORDINATES.

a. WILL THIS HOLD TRUE GIVEN ANY VALUE OF THE RADIUS?

b. WILL THIS HOLD TRUE FOR ANY POSITION OF THE LINE.

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This problem is very time consuming. There are many different steps involved in just solving part (a). The slope must be calculated, then plugged into the equation of the line with the x, y coordinates of the ball to calculate where its path crosses the y-axis. Then, using the equation of the line and circle, solve for the x & y coordinates.

How can I explain this procedure to a classroom of students without confusing them?

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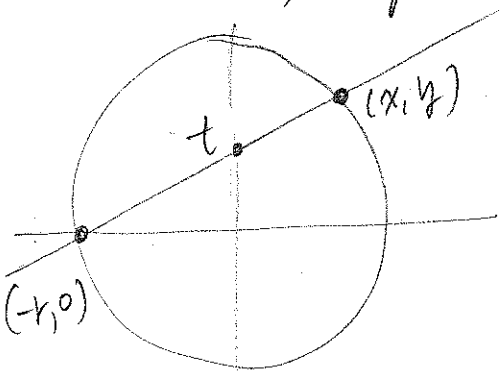
I was able to solve this question when I approached doing it from the start. Meaning, by assigning new variables, composing the equations, and finding



$x^2 + y^2 = r^2$

$y = \frac{t}{r}x + t$

the entering point and exiting point of x-coordinates.

$x = -1$ or $\frac{-t^2 + r^2}{r^2 + t^2}$

However, I had a trouble of making connection between my work, $\frac{-t^2+r^2}{r^2+t^2}$, and the previous work, $\frac{-t^2+1}{1+t^2}$. Maybe, I should have used a different variable, T, instead of the same t.

I have no further question.

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As I understand it we have shown how a circular green with a radius of 1 produces a rational solution for both "x" and "y" coordinates, we accomplished this by defining a point "t" where the ball crosses through the y-axis. We then generalized "t" in terms of "a" and "b" as the starting coordinates (a, b) and $t = \frac{b}{a+1}$. I am unable to demonstrate the rational solutions for the general case of a circle with radius "r" and defining t in terms of "a", "b", and "r". My question would be how to accomplish this. How can I define the ball's linear trajectory, the circles general form, and the "x" and "y" solutions being rational with only variable "x", "y", "a", "b", and "r" where "a" and "b" are the x- and y-coordinates of the starting point respectively "r" is the radius of the circle, and "x" and "y" are the input and output of the functions on the plane

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Honestly cl don't even know where to begin. cl know we have a circle with the radius of 35 and there is a ball whose path crosses the circumference of the circle.

Why are we investigating rational and irrational answers?

Where did slope come into play in the problem?

How does scale factor play into the problem?

What if you change the origin to be the first intersection of the ball with the circumference?

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Since This is Used to calculate Pythagorean Tripples, how can we assure that the X and y Coordinates, or legs, are integers instead of just rational Numbers?

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I enjoyed working on this problem yesterday with my fellow classmates. Without them, I wouldn't know where to begin. They helped me understand the steps to perform however it would be very difficult for me to reproduce the steps to this problem.

I'm not sure what questions to ask because my content knowledge in this area is limited. I don't know where to start.

There are some very basic topics that could be related to 9th grade math. Parts of this problem could be useful for teaching pythagorean theorem, radius and circumference of a circle.

I'm glad to be experiencing math on a new level of difficulty. Even though I don't always understand the material, it's helpful to be exposed to advanced math concepts.

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BIG QUESTION:

How will this relate to eighth graders? I am having trouble figuring out how/what this problem is asking for or what to do with it. I can understand manipulating formulas to solve for other variables.

I guess I need to know how to relate THIS work to the level I teach. The way that I'm looking at it is (or I should say what can I take away from this), is I can relate circles, to Pythagorean Theorem using circumference, radius, diameter. I can also use some pieces of this to teach/demonstrate manipulation of formulas to solve for specific variables.

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1.) After we got our simplified equation, $0 = (1+t^2)x^2 + 2t^2x + (t^2-1)$, how would we know to use quadratic?

2.) At some point, when were trying to re-scale ~~finding what t~~ with a new radius, why is the radius negative?

3.) How can I make this useful in middle school? (How can I make it simpler?)

4.) How could you change the situation to make it more interesting for students to get involved?

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I am unsure that I would be able to show anyone else how to come to the same conclusions we have.

How could I change this to make it more simple for my students to understand?

How could I build up their knowledge and critical thinking skills that would apply to problems like this?

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- What is the general instructional concept that I could use (or transfer) into my classroom?
- I have ~~an~~ no mathematical questions, so what do I do next? (Oh sorry, this is not true)
- What is the relationship between the points of the line and their intersection into the circle, that allows the points to always be rational values?

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At what grade level or math class would I introduce this golf problem to a high school student?

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How can you determine whether or not a Pythagorean Triple is present in the solution?

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I have difficulty understanding the process from a general solution to a particular case with a fixed radius/ points. How do we relate Pythagorean primitive triplets with the rationality for z in our problem?

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1) I never would of saw using substitution to do the quadratic equation. How did you know tho do ~~that~~ ?

*) @ what age or level should students be able to work this level problem?

*) How would you relate this problem to the students to keep them interested?

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1) how did you get $s(a,b)$ then $t = \frac{b}{a+1}$?

2) what would be a good way to teach solving with constants? (ie when we solved with t)

3) How can I apply this way of problem solving to my classes?

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1) Once we changed our circle from a radius of 35 to a radius of 1 and rewrote our linear equation as $y = t(x+1)$ I realized I was very confused. How did we come to this linear equation?

2) Why did we not solve using our $x = -1$? Or was it to confirm an answer we already knew?

3) Where did $t = \frac{b}{a+1} = \frac{b}{a+r}$ come from? Why?

4) How could I use this in my high school classroom?