

# Activity Worksheet

## Activity Details – Activity 2 (Quadratic Equation)

**LO to be covered:** *Apply the quadratic formula to solve a real-world problem.*

**Selected type of activity:** *Variation on Think-Pair-Share, using the 4 steps of problem solving*

**Why is this activity well suited to the concept/topic?** *Makes students first think on their own, then confirm their answer*

**How will you know that students have mastered the LO(s) as a result of this activity?**

*They get the correct answer and can explain it. Especially when done with clickers, I will have feedback from all students. Will also have selected student pairs come to the board and explain their work.*

### Prep Work

*What needs to happen outside of class before the active learning session starts?*

Instructor Prep Work (e.g. prepare materials/slides)	Student Prep Work (e.g. read, watch video)
<ul style="list-style-type: none"><li>• Prepare a handout with three to five different application problems. Also put those problems on slides that can be projected when students write their answers on the board. Each group is assigned a “starting problem” and there should be at least two groups starting on the same problem. Pick a number of problems that can accommodate that. For very large classes, have 3 or 4 groups work on the same problem, otherwise the share portion becomes too long.</li><li>• Prepare a slide that has the descriptions of the four steps that can be projected during class for reference</li><li>• Think of a method how you will assign the different roles. For example, you can let the person whose first name has the earliest letter in the alphabet be the identifier, and then go around clockwise with the other roles.</li><li>• Think how you will assign the groups – self chosen, assigned via randomly distributed cards, letters, numbers?</li></ul>	<ul style="list-style-type: none"><li>• Students have worked through pre-class exercises and are comfortable using quadratic formula.</li><li>• Students have read example of the 4 step method</li></ul>

### Steps

*List the steps needed to conduct the active learning session in class. What will students do within their groups? How will groups interact? How will you as the instructor interact with students and conduct the debrief?*

- ① Description & Time Required: Think individually (15 mins)

Instructions to Students	Materials Required
Please form groups of four (according to the selected method). I will assign each group a number, and you will completely solve the problem on the handout that has your group’s number. The person whose letter is first in the alphabet will be the identifier and the other roles are assigned in order of the steps going clockwise. Solve your problem using the four steps and write your	Handout with numbered problems

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answers in the grid. Once you have finished your problem, work on the next problem, switching roles counter clockwise, that is, the person to your left will now perform the role that you had in the previous problem. Finish as many problems as you can, switching roles each time.	
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- ② Description & Time Required: Share between groups (5 mins)

<b>Instructions to Students</b>  Groups who have worked on problem # 1, please send the student who was the identifier to cross check your solutions. Groups who have worked on # 2, send your Answerer to cross check the solution, ...	<b>Materials Required</b>  None
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- ③ Description & Time Required: Share (10 mins)

<b>Instructions to Students</b>  For each problem, a randomly chosen student from one of the groups will explain the problem using their cross-checked solution and present it via the document camera	<b>Materials Required</b>  Document camera.
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- ④ Description & Time Required:

<b>Instructions to Students</b>	<b>Materials Required</b>
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Adapted from handout by Center for Effective Teaching and Learning (CETL, Cal State LA)