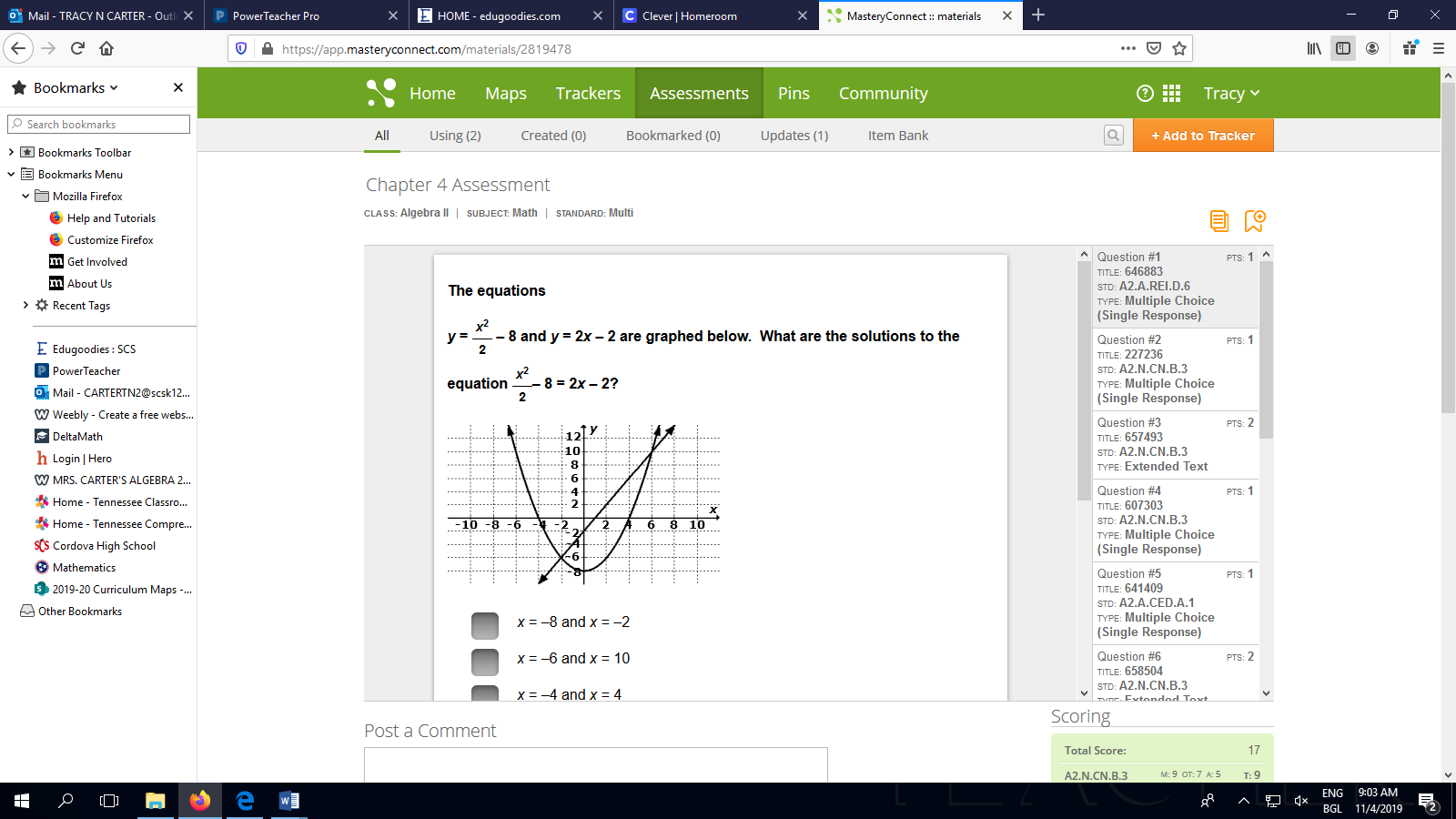
**Chapter 4 assessment (CFA in Mastery Connect)**

1. The equations and are graphed below. What are the solutions to the equation ?

A and

B and

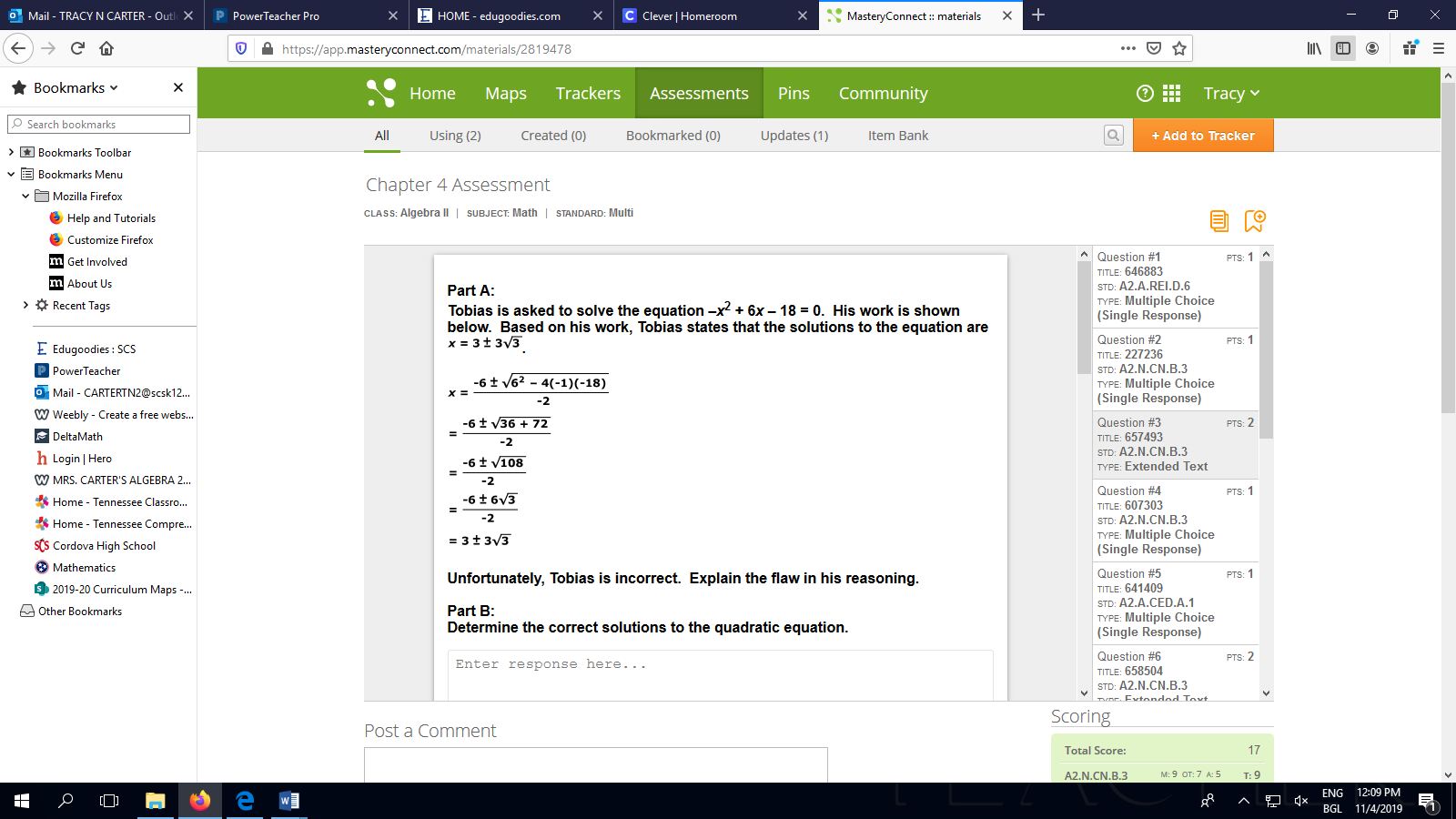
C and

D and

1. What are complex solutions to the equation?

A B C D

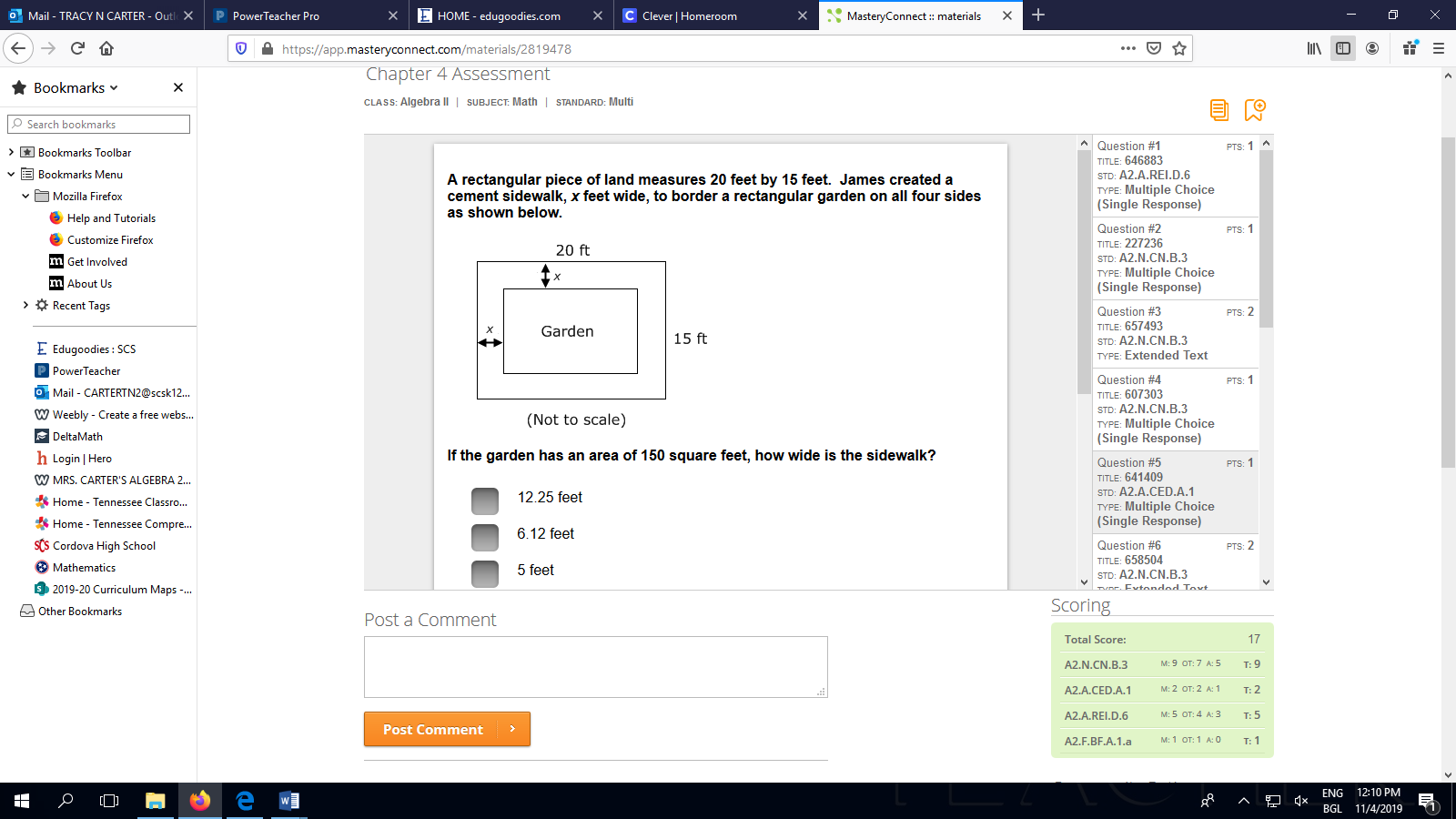
1. Tobias is asked to solve the equation . His work is shown below. Based on his work, Tobias states the solutions to the equation are .



* 1. Unfortunately, Tobias is incorrect. Explain the flaw in his reasoning.
  2. Determine the correct solutions to the equation.

1. Solve

A -1 B 1 C D

1. A rectangular piece of land measures 20 feet by 15 feet. James created a cement sidewalk, *x* feet wide to border a rectangular garden on all four sides as shown below. If the garden has an area of 150 square feet, how wide is the sidewalk?

A 12.25 feet

B 6.12 feet

C 5 feet

D 2.5 feet

1. Marissa is playing a game at the carnival that requires her to hit a spring with a large hammer. After the spring is hit, a puck shoots upward towards the bell. Marissa hits the spring according to the model. , where represents the distance between the puck and the bell and *x* represents the time after hitting the spring (in seconds).

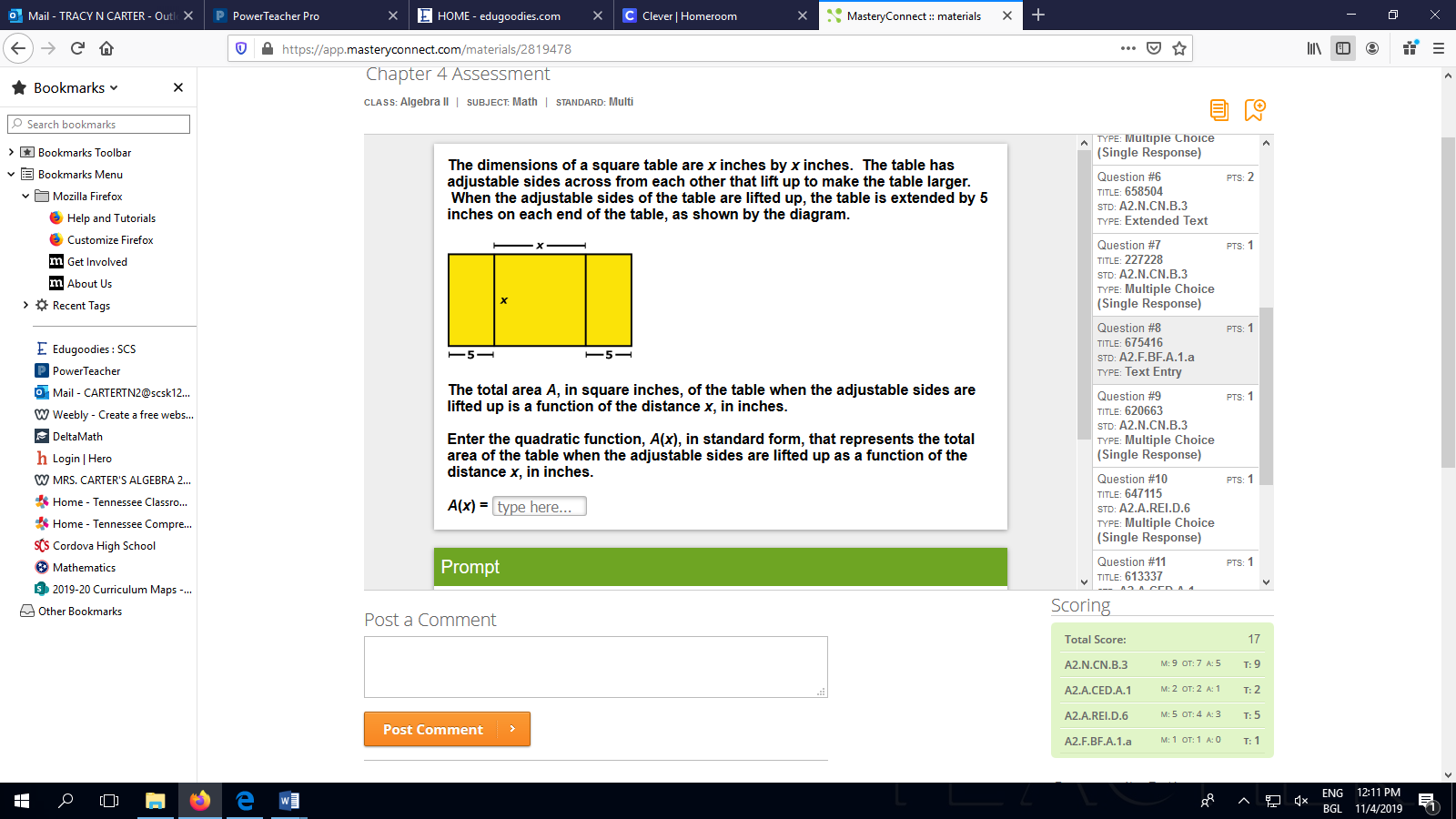
a. What type of solution(s) does the equation have?

b. Will the puck hit the bell after Marissa hit? Why or why not?

1. What are the solutions to the equation

A B C D

1. The dimensions of a square table are *x* inches by *x* inches. The table has adjustable sides of the table are lifted up, the table is extended by 5 inches on each end of the table, as shown by the diagram. The total area *A*, in square inches, of the table when the adjustable sides are lifted up is a function of the distance *x* in inches. Write the quadratic function *A*(*x*), in standard form that represents the total area of the table when the adjustable sides are lifted up as a function of the distance, in inches.



1. Anthony is solving the equation by completing the square. What number should be added to both sides to complete the square?

A 20 B 36 C 52 D 144

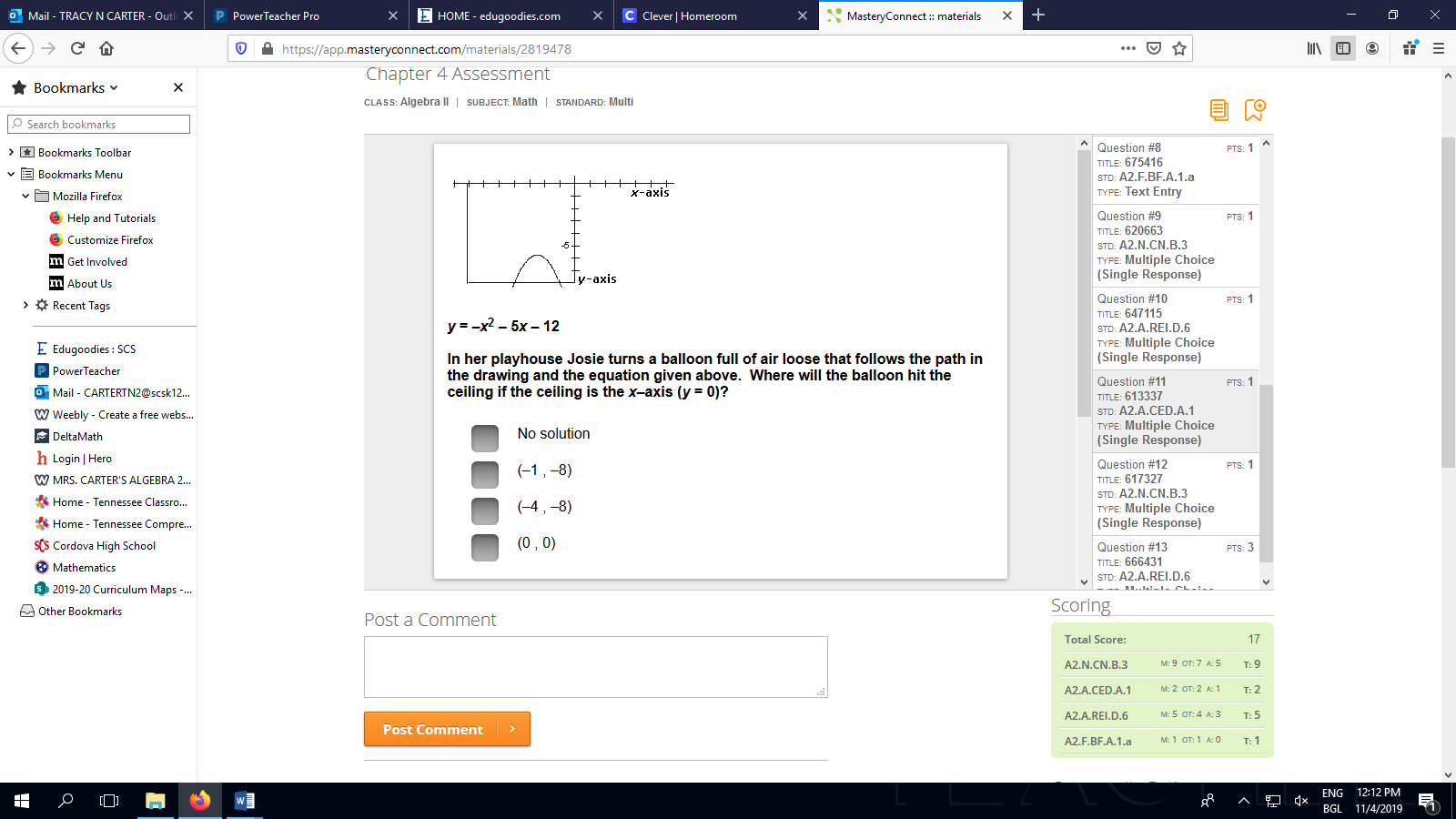
1. The graphs of the equations and intersect at 4 points. Which of these is a correct statement?

A must be a solution to the equation and to the equation .

B The number of solutions to the equation and the number of solutions to the equation must be 4.

C must be a solution to .

D The number of solutions to the equation must be 4.

1. In her playhouse Josie turns a balloon full of air loose that follows the path in the drawing below and the equation . Where will the balloon hit the ceiling if the ceiling is the *x*-axis (*y* = 0)?

A no solution

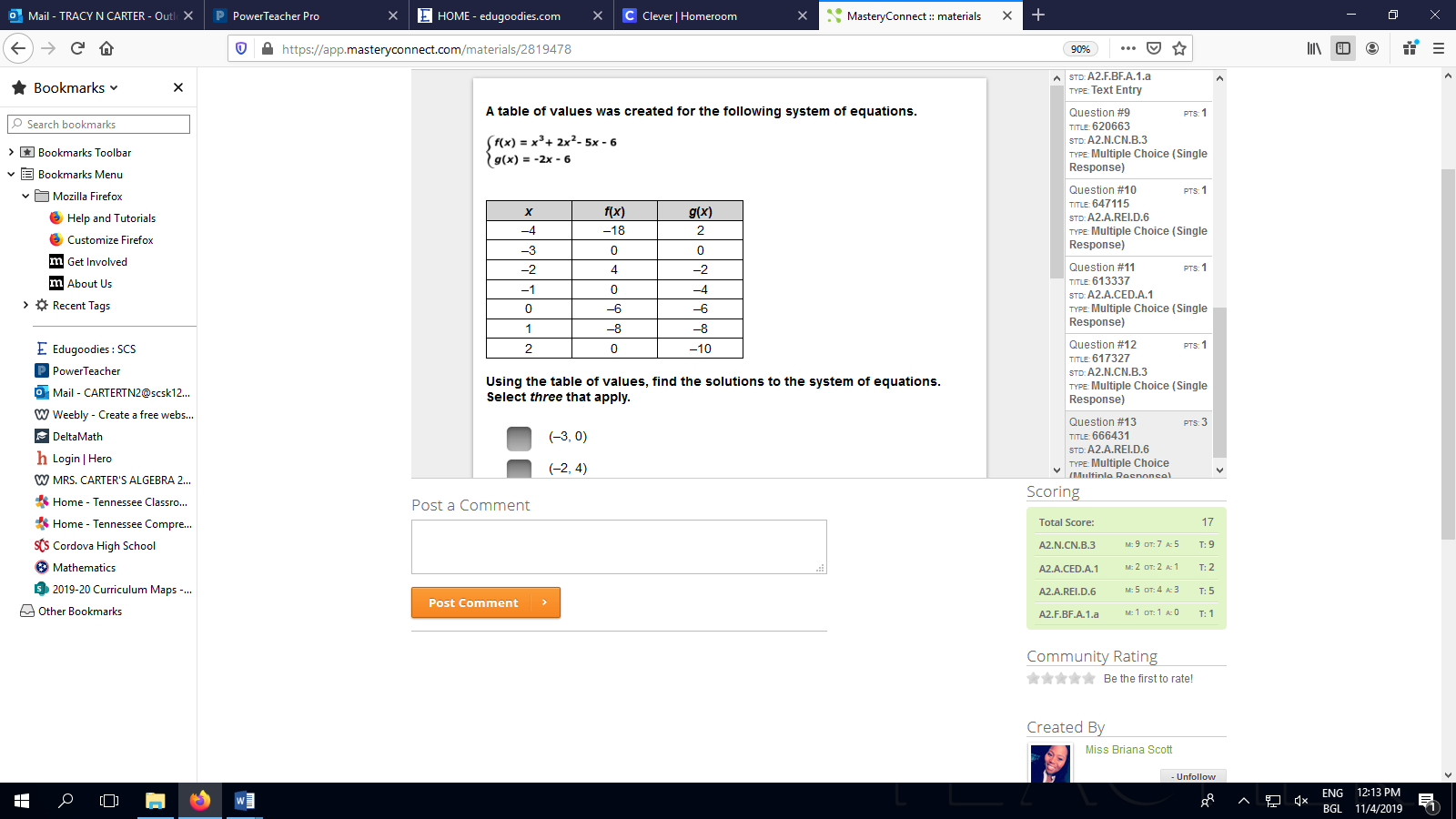
B (-1, -8)

C (-4, -8)

D (0, 0)

1. Us the binomial theorem to expand the complex number . Simplify the expansion.

A B C D

1. A table of values was created for the system of equations below. Using the table of values, find the solutions to the system of equations. Select three that apply.

A (-3, 0)

B (-2, 4)

C (0, -6)

D (1, -8)