

Go to <http://www.scottfarrar.com/algebra>

Use the tools to analyze the shots. Try dragging points around and seeing what happens.

## Shot 1

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1. Will the ball go in the hoop? Off the rim? Airball?
2. What are the coordinates of the  $y$ -intercept?  
(     ,     )
3. What are the coordinates of the vertex?  
(     ,     )
4. What are the coordinates of the hoop?  
(     ,     )
5. Where is the axis of symmetry? (aos)  
 $x =$  \_\_\_\_\_
6. What is the equation ?

$$y = ax^2 + bx + c$$

$$y =$$

## Shot 2

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7. Will the ball go in the hoop? Off the rim? Airball?
8. What are the coordinates of the  $y$ -intercept?  
(     ,     )
9. What are the coordinates of the vertex?  
(     ,     )
10. What are the coordinates of the hoop?  
(     ,     )
11. Where is the axis of symmetry? (aos)  
 $x =$  \_\_\_\_\_
12. What is the equation ?

$$y = ax^2 + bx + c$$

$$y =$$

## Shot 3

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13. Will the ball go in the hoop? Off the rim? Airball?
14. What are the coordinates of the  $y$ -intercept?  
(     ,     )
15. What are the coordinates of the vertex?  
(     ,     )
16. What are the coordinates of the hoop?  
(     ,     )
17. Where is the axis of symmetry? (aos)  
 $x =$  \_\_\_\_\_
18. What is the equation ?

$$y = ax^2 + bx + c$$

$$y =$$

## Shot 4

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19. Will the ball go in the hoop? Off the rim? Airball?
20. What are the coordinates of the  $y$ -intercept?  
(     ,     )
21. What are the coordinates of the vertex?  
(     ,     )
22. What are the coordinates of the hoop?  
(     ,     )
23. Where is the axis of symmetry? (aos)  
 $x =$  \_\_\_\_\_
24. What is the equation ?

$$y = ax^2 + bx + c$$

$$y =$$

## Shot 5

25. Will the ball go in the hoop? Off the rim? Airball?

26. What are the coordinates of the  $y$ -intercept?

( , )

27. What are the coordinates of the vertex?

( , )

28. What are the coordinates of the hoop?

( , )

29. Where is the axis of symmetry? (aos)

$x =$  \_\_\_\_\_

30. What is the equation ?

$$y = ax^2 + bx + c$$

$y =$

## Shot 7

37. Will the ball go in the hoop? Off the rim? Airball?

38. What are the coordinates of the  $y$ -intercept?

( , )

39. What are the coordinates of the vertex?

( , )

40. What are the coordinates of the hoop?

( , )

41. Where is the axis of symmetry? (aos)

$x =$  \_\_\_\_\_

42. What is the equation ?

$$y = ax^2 + bx + c$$

$y =$

## Shot 6

31. Will the ball go in the hoop? Off the rim? Airball?

32. What are the coordinates of the  $y$ -intercept?

( , )

33. What are the coordinates of the vertex?

( , )

34. What are the coordinates of the hoop?

( , )

35. Where is the axis of symmetry? (aos)

$x =$  \_\_\_\_\_

36. What is the equation ?

$$y = ax^2 + bx + c$$

$y =$

43. What does the  $y$ -intercept *mean* in these real world graphs?

\_\_\_\_\_  
\_\_\_\_\_.

44. What does the vertex *mean* in these real world graphs?

\_\_\_\_\_  
\_\_\_\_\_.

45. How are the axis of symmetry and the vertex point related?

\_\_\_\_\_  
\_\_\_\_\_.

46. Do the  $x$ -intercepts have a real world meaning on these graphs? \_\_\_\_\_

\_\_\_\_\_.

47. How is  $a$  related to the graph? (from  $y = ax^2 + bx + c$ ) \_\_\_\_\_

\_\_\_\_\_.

48. What would it mean if  $a$  were positive? \_\_\_\_\_

\_\_\_\_\_.

49. What are some of the problems with this model? \_\_\_\_\_

\_\_\_\_\_.