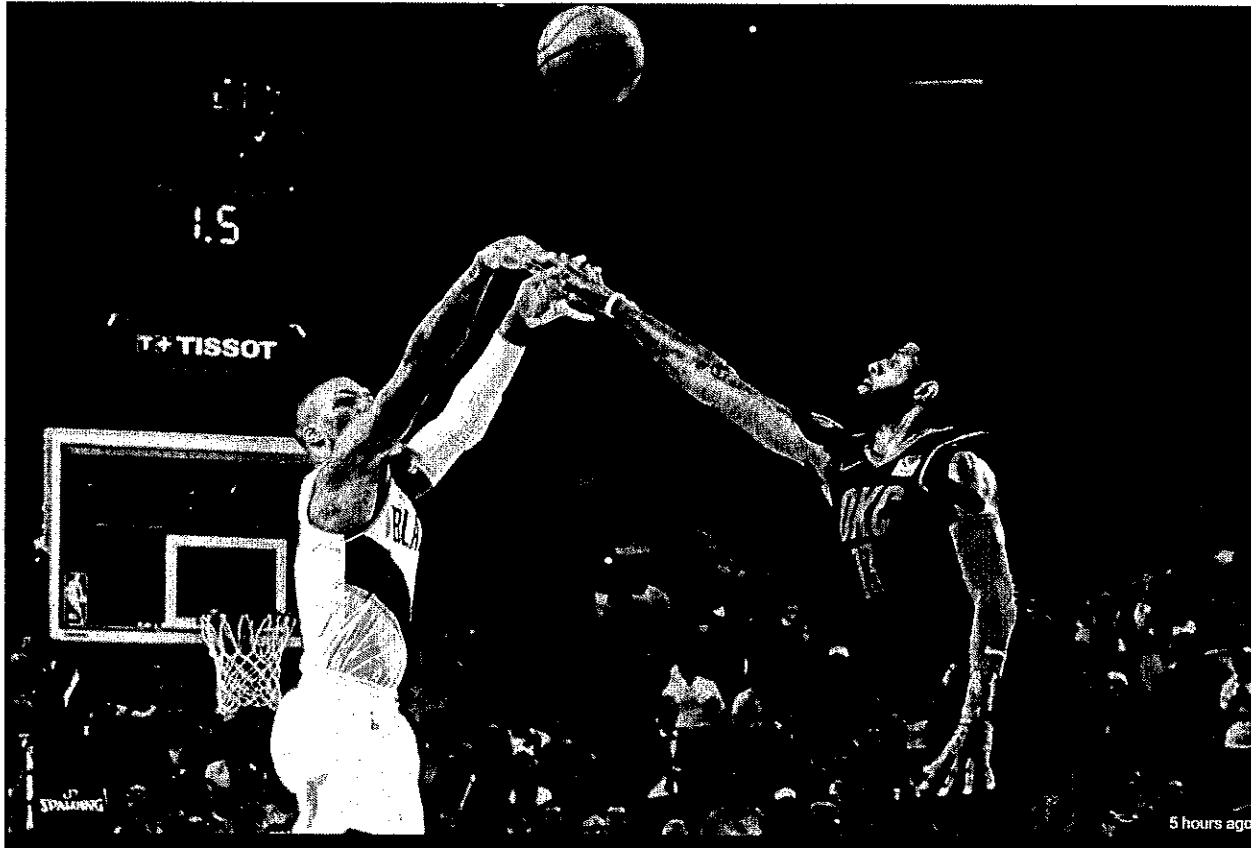
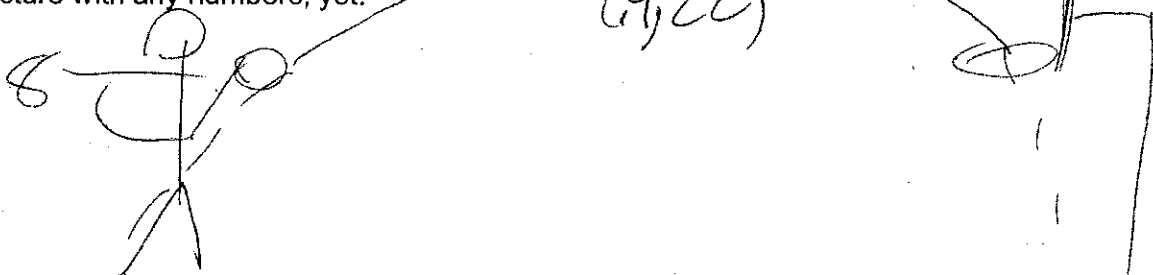


Lillard's (ridiculous) shot

On Tuesday, Damian Lillard hit a ridiculous shot over Paul George to win Game 5 of the first round of the NBA playoffs. Here's a picture of the release:



1. Draw a picture of the ball as it travels toward the hoop. Don't worry about labeling your picture with any numbers, yet.



2. The ball left Lillard's hands with 2.0 seconds on the game clock and went in the basket with .2 seconds remaining. How long was the ball in the air?

$$2.0 - .2 = 1.8 \text{ seconds}$$

3. Damian Lillard is 6'3" tall, but he released the shot from above his head. Estimate the starting height of the ball and add that to your sketch in problem 1. What vocab word describes the starting height of the ball?

Starting height of 8 ft.

4. The ball reached its highest point with 1.1 seconds left on the clock, and reached a height of 22 feet. Add these numbers to your sketch in problem 1. What vocab word describes the highest point of the ball?

Vertex!

5. The equation for Lillard's shot is $y = -16(x - .9)^2 + 22$. How do the numbers in the equation relate to the graph? (Only 2 of the 3 numbers are directly related)

.9 & 22 are vertex.

6. The basket is 10 feet high. Write and solve an equation to find the time when the ball went into the basket.

$$10 = -16(x - .9)^2 + 22$$

$$-22 \quad -22$$

$$-12 = -16(x - .9)^2$$

$$\frac{-12}{-16} = \frac{-16(x - .9)^2}{-16}$$

$$\frac{3}{4} = (x - .9)^2$$

$$\sqrt{\frac{3}{4}} = \sqrt{(x - .9)^2}$$

$$.866 = x - .9 \quad -.866 = x - .9$$

$$1.766 = x \quad 0.034 = x$$

7. The graph below shows the equation $10 = -16(x - .9)^2 + 22$. Explain the meaning of each highlighted point.

