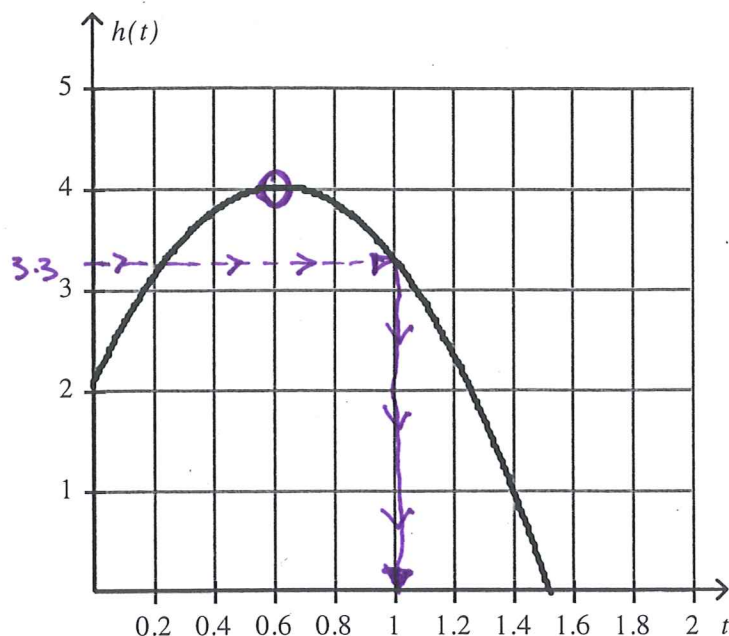
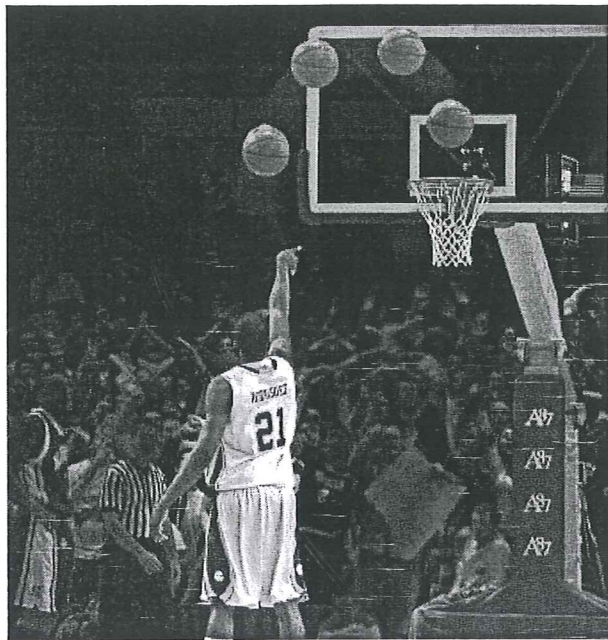


Algebra I: Unit 06 review :: Real-world parabolas: Basketball shot



A basketball player shoots a freethrow. After the ball leaves his hands, the height h (in meters) of the ball above the floor is a function of time t (in seconds), as shown by the graph above.

For each question below, be sure to

- use correct units in your answer
- show your work or explain your reasoning in complete sentences

1. How tall is the basketball player?

2 m. THIS IS THE y-INTERCEPT

2. Explain the meaning of the x -intercept in the context of this problem.

THE TIME WHEN THE BALL HITS THE GROUND

3. Using the graph, estimate $h(0.3)$. $h(0.3) \approx$ 3.5

4. Explain the meaning of $h(0.3)$ in the context of this problem.

AFTER 0.3 SECONDS, THE BALL IS 3.5 m HIGH.

5. Circle the vertex on the graph.

Explain the meaning of the vertex in the context of this problem

AFTER 0.6 s, THE BALL REACHES ITS MAXIMUM HEIGHT OF 4 m.

6. The basket is approximately 3.3 meters above the ground. Assuming the player hits the basket, how long is the ball in the air for?

AFTER ~ 1 SECOND. (SEE GRAPH FOR WORK)

7. Which equation below matches the parabola?

a. $h(t) = -5t^2 + 6t - 1.5$

b. $h(t) = -5t^2 + 6t + 2$

c. $h(t) = 5t^2 + 6t - 1.5$

d. $h(t) = 5t^2 + 6t + 2$

Explain how you chose your answer.

OPENING DOWN, SO x^2 TERM IS \ominus .

y-INTERCEPT IS 2, ~~2~~