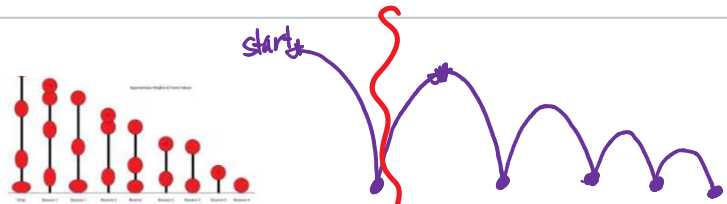


The Bounce.

Wednesday, April 19, 2017 8:14 AM

The **BOUNCE** Ball



Suppose that a rubber ball is dropped DIRECTLY down from a height of 20 feet. It bounces directly up and down, with each bounce going 72% as high as the one before it.

- a. Write the explicit formula for the sequence in part (a).

$$a_n = 20(.72)^{n-1} \quad \text{sort of depends on perspective}$$

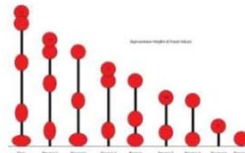
- b. What is the total distance that the ball travels when it hits the ground for the 5th time?

$$\left[\frac{14.4(1 - (.72)^5)}{1 - 0.72} \right] \cdot 2 + 20 = 95.22 \text{ feet}$$

- c. What is the total distance that the ball travels before it stops?

$$\left[\frac{14.4}{1 - 0.72} \right] \cdot 2 + 20 = 122.86 \text{ feet}$$

The **BOUNCE** Ball



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- a. Write the explicit formula for the sequence in part (a).

- b. What is the total distance that the ball travels when it hits the ground for the 5th time?

- c. What is the total distance that the ball travels before it stops?

