

Mon 3/26/2018

<p><b>ME DO:</b> A theatre has 25 seats in the first row and 16 rows in all. If the second row has 28 seats, third row has 31 seats, and each successive row has 3 more seats than the row in front, how many seats does the theatre have total?</p>	<p><b>YOU DO:</b> A brick staircase has a total of 28 steps. The bottom step requires 100 bricks and each successive step requires 2 less bricks than the prior step.</p> <p>a. How many bricks are required for the top step?</p> <p>b. How many bricks are required to build the staircase?</p>
<p><b>ME DO:</b> A ball is bounced from a height of 30 feet. Each time it strikes the ground, it bounces up to 70% of its previous height.</p> <p>a. Draw a diagram representing the drop heights and rebound heights for the first three bounces.</p> <p>b. Write the first 3 terms of the series which models all the drop heights.</p> <p>c. Write the first 3 terms of the series which models all the rebound heights.</p> <p>d. Theoretically, what is the total vertical distance the ball travels before coming to rest?</p>	<p><b>YOU DO:</b> A ball is bounced from a height of 48 feet. Each time it strikes the ground, it bounces up to 75% of its previous height</p> <p>a. Draw a diagram representing the drop heights and rebound heights for the first three bounces.</p> <p>b. Write the first 3 terms of the series which models all the drop heights.</p> <p>c. Write the first 3 terms of the series which models all the rebound heights.</p> <p>d. Theoretically, what is the total vertical distance the ball travels before coming to rest?</p>

**PRACTICE SET = HOMEWORK** Please complete these problems on separate paper. You should reference your examples if you are stuck. Recall that it is best to layout the first three terms of the series to help with determining type of formula needed.

<p>[1] Baby Einstein was stacking her blocks to make a pyramid. The top of the pyramid was comprised of three blocks, and each row below that had 5 more blocks than the one above it.</p> <p>a. How many blocks would be in the 16<sup>th</sup> row?</p> <p>b. How many blocks total did baby Einstein use to build a pyramid with 16 rows?</p>	<p>[2] Baby Einstein convinces her not so smart older sibling to climb on the roof to drop the rubber ball she made in her laboratory. If the ball is dropped 16 feet and rebounds to 80% of its previous height after each bounce, theoretically, what is the total vertical distance the ball travels before coming to rest?</p>
<p>[3] The corner section of a football stadium has 15 seats in the first row, 17 seats in the second row, 19 seats in the third row and so-on. If the corner section has 40 rows, how many seats total are in this section of the stadium?</p>	<p>[4] Initially, a pendulum swings through an arc of 24 inches. On each successive swing, the length of the arc is 90% of the previous length. (Notice this is different than a ball bouncing because the first length is 24 inches, the second length is 21.6 inches and the third length is 19.44 inches).</p> <p>a. What is the total distance the pendulum has traveled after the 6<sup>th</sup> swing.</p> <p>b. Theoretically, what is the total distance the pendulum swings before it comes to rest?</p>

ANSWERS: 1a) 78 blocks 1b) 648 blocks 2) 144 ft 3) 2160 seats 4a) 112.454116 inches 4b) 240 inches