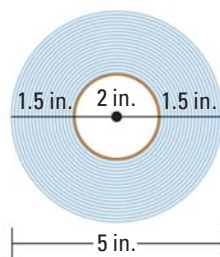


68. **EXTENDED RESPONSE** A paper towel manufacturer sells paper towels rolled onto cardboard dowels. The thickness of the paper is 0.0004 inch. The diameter of a dowel is 2 inches, and the total diameter of a roll is 5 inches.

n	d_n (in.)	l_n (in.)
1	2	2π
2	?	?
3	?	?
4	?	?



- a. **Calculate** Let n be the number of times the paper towel is wrapped around the dowel, let d_n be the diameter of the roll just before the n th wrap, and let l_n be the length of paper added in the n th wrap. Copy and complete the table.
- b. **Model** What kind of sequence is $l_1, l_2, l_3, l_4, \dots$? Write a rule for the n th term of the sequence.
- c. **Apply** Find the number of times the paper must be wrapped around the dowel to create a roll with a 5 inch diameter. Use your answer and the rule from part (b) to find the length of paper in a roll with a 5 inch diameter.
- d. **Interpret** Suppose a roll with a 5 inch diameter costs \$1.50. How much would you expect to pay for a roll with a 7 inch diameter whose dowel also has a diameter of 2 inches? *Explain* your reasoning and any assumptions you make.
69. **CHALLENGE** A theater has n rows of seats, and each row has d more seats than the row in front of it. There are x seats in the last (n th) row and a total of y seats in the entire theater. How many seats are in the front row of the theater? Write your answer in terms of n , x , and y .



MIXED REVIEW FOR TAKS

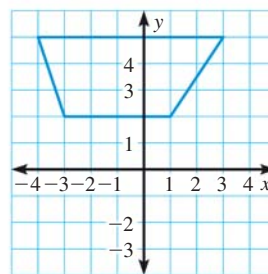
TAKS PRACTICE at classzone.com

REVIEW

Lesson 9.1;
TAKS Workbook

70. **TAKS PRACTICE** What is the approximate perimeter of the trapezoid? **TAKS Obj. 7**

- (A) 17.0 units
(B) 17.8 units
(C) 24.6 units
(D) 29.0 units



REVIEW

Lesson 10.3;
TAKS Workbook

71. **TAKS PRACTICE** Sam randomly selects one card from a standard deck of 52 cards. Which of the following events has a probability of occurring that is about 8%? **TAKS Obj. 9**

- (F) The card is a spade. (G) The card is the 3 of hearts.
(H) The card is a queen. (J) The card is a red card.

