

Name _____

1-3B Lesson Master

Questions on SPUR Objectives

See pages 60–63 for objectives.

SKILLS Objectives B, C

In 1–3, consider three instances of the pattern below:

$$-\sqrt{1^2} = -1$$

$$-\sqrt{2^2} = -2$$

$$-\sqrt{3^2} = -3$$

- Describe the pattern using one variable. _____
- Find another number that is an instance of this pattern.

- Find a number that is a counterexample to this pattern.

- Using the table, evaluate each expression for 4 different values of the variable.

n	$n^2 - n - 2$	$n^2 - 2n - 1$

Use your results to determine whether the expression $n^2 - n - 2$ appears to be equivalent to the expression $n^2 - 2n - 1$ and explain your reasoning.

In 5–8, refer to 3 instances of the pattern that is made with circles and line segments.

- Draw the fourth instance of the pattern.



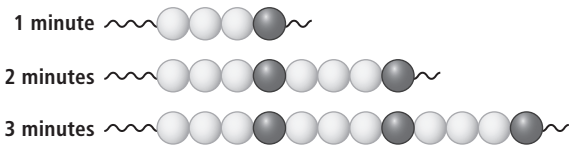
- How many circles and how many line segments will there be in the 10th instance? _____
- How many circles are needed to make the n th design? _____
- Describe the pattern of line segments using the variable n to represent the number of circles. _____

Name

SKILLS

Objectives B, C

In 9–12, use the picture of the beaded necklace that Diane is creating. The picture shows what the necklace looks like after she works on it for one, two, and three minutes.



9. Draw what the necklace looks like after the 4th minute if Diane keeps working at the same rate.
10. How many white beads and black beads will the necklace have after 10 minutes at this rate?
11. Write an expression for the number of black beads the necklace will have after n minutes at this rate.
12. Write an expression for the number of white beads the necklace will have after n minutes at this rate.
13. Yaron is tying together pieces of rope for a game of tug-of-war. He ties a double knot (counted as two knots) to connect two pieces of rope. Figure out how many knots he ties, based on how many pieces of rope he has.

Pieces of rope	Knots
1	0
2	2
3	4
4	
5	
6	

- a. Complete the chart and describe the pattern of knots using the variable r to represent the number of pieces of rope.
- b. How many knots will Yaron tie if he has 11 pieces of rope?