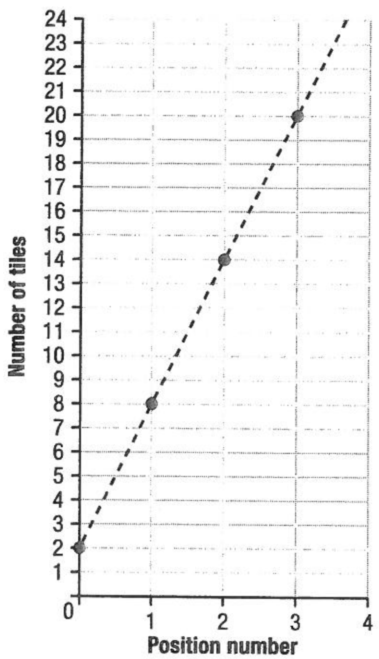
Name: ______________________ Date: ______________

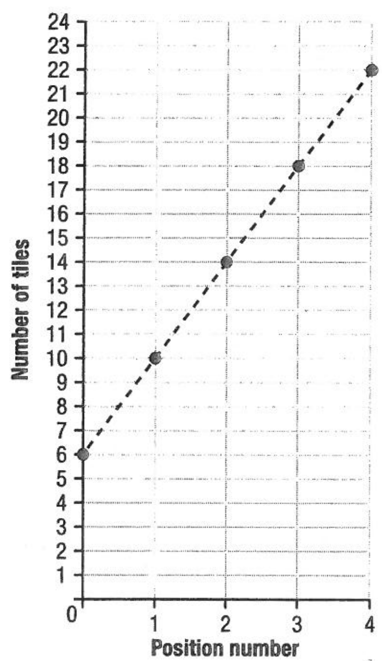
BLACKLINE MASTER 22

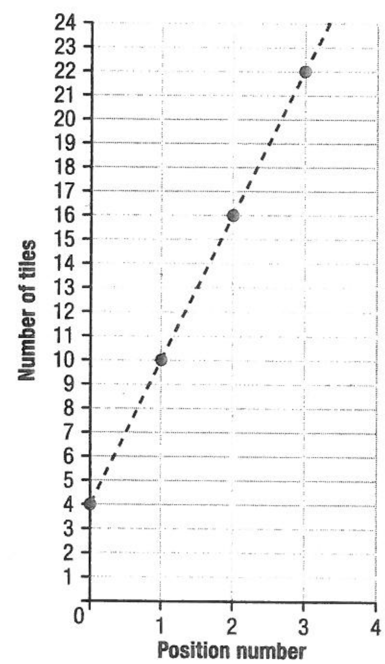
WHICH RULE GOES WITH EACH GRAPH?

Match each graph with the rule that the trend line represents.

- number of tiles = position number × 4 + 6
- number of tiles = position number × 6 + 4
- number of tiles = position number × 2 + 6
- number of tiles = position number × 6 + 2







Rule: ______________ Rule: ______________ Rule: ______________

How do you know that you have matched each graph with the correct rule?

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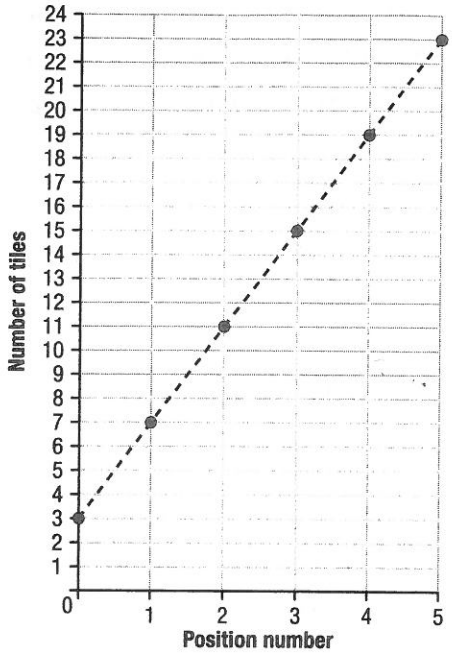
BLACKLINE MASTER 23

PATTERN RULES AND GRAPHS CHALLENGE 2

1. Examine the trend line on the graph below.



What pattern rule would have a trend line that starts at the same vertical intercept (y-intercept) but has a different steepness? Explain your thinking.

2. What would happen to the trend line on the graph above if the rule changed to "number of tiles = position number × 4 + 5"? Check one:

☐ The trend line would start higher on the vertical axis (y-axis).

☐ The trend line would be steeper.

☐ The trend line would start higher *and* be steeper.

Explain your thinking.

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3. Based on the graph in question 1, suggest rules that would have trend lines with the following characteristics:

   a) trend lines that start higher on the vertical axis (y-axis)

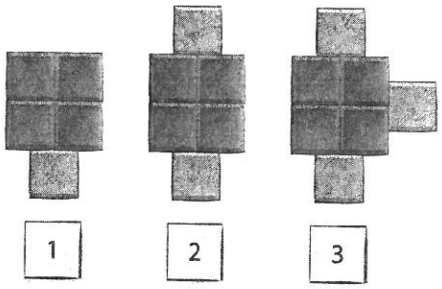
   b) trend lines that are steeper

   c) trend lines that are both higher and steeper

   Explain your thinking.

4. Imagine what the trend line for the rule "number of tiles = position number $\times$ 5 + 4" would look like. Construct a graph for a rule with a trend line that starts at the same place on the vertical axis (y-axis) but has a different steepness.

5. Examine the linear growing pattern. Imagine what the trend line for this pattern would look like. What pattern rule would have a trend line that has the same steepness but starts at a different vertical intercept (y-intercept)? Explain your thinking.



6. What pattern rule would have the same multiplier as the rule for the pattern above, but a different constant? Explain your thinking.