1. Fill in the empty spaces in Joe’s table of results.

   - Add 5 toothpicks per hexagon

   - You can also multiply the amount of hexagons by 6 and subtract toothpick for each shared toothpick. Can 2x6 = 12 + shared toothpick = 12 - 1 = 11

2. How many toothpicks does Joe need to make 5 hexagons?
   Explain how you figured it out.

   - Joe needed 3 + (4/6) = 3.66

3. How many toothpicks does Joe need to make 12 hexagons?
   Explain how you figured it out.

   - Joe calculated 6x12 = 72 toothpicks
     Multiply by 6 and subtracted 11 for the 11 shared toothpicks. 
     11 = 61 toothpicks

4. Joe has 76 toothpicks.
   How many hexagons in a row can he make?
   Explain how you figured it out.

   - Joe multiplied 15 by 6 which equals 90.
   - Then subtracted 44 for the 44 shared toothpicks. 
     90 - 44 = 76 toothpicks (worked backwards).
2. How many toothpicks does Joe need to make 5 hexagons?
   Explain how you figured it out.
   \[6+5+5+5+5=26\] 

3. How many toothpicks does Joe need to make 12 hexagons?
   Explain how you figured it out.
   \[5+5+5+5+5+5+5+5+5+5+5+5+5+5+5+5+5+5+5+5+5=61\]

4. Joe has 76 toothpicks. How many hexagons in a row can he make?
   Explain how you figured it out.
   \[15 \text{ hexagons}\]

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Student C

4. Joe has 76 toothpicks. How many hexagons in a row can he make?
   Explain how you figured it out.
   You first know that the first hexagon needs 6 so you minus 76-6=70.
   So you record you have 2 leftover.
   You divide 70 by 5 now you know you have 15 because 5 goes in to 70 14 times after you add 14+1=15 hexagons.
Student Work for Hexagons in a Row

Student D

2. How many toothpicks does Joe need to make 5 hexagons? 26

Explain how you figured it out.

3. How many toothpicks does Joe need to make 12 hexagons? 61

Explain how you figured it out.

4. Joe has 76 toothpicks.

How many hexagons in a row can he make? 15

Explain how you figured it out.