

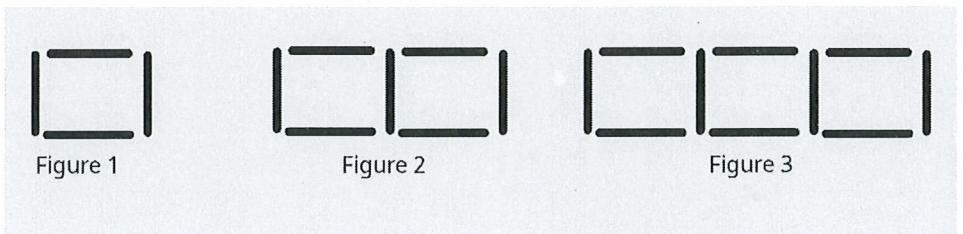
Key

# Quiz 1

This is a two-stage quiz. During the first stage, use your knowledge & calculator to take this quiz. You have 15 min. In the second stage, you are now welcome to use your books, notes, and students in the class to retake the same quiz. You have 15 min. to write one solution (with everyone's name on it!) to be turned in for the group.

Show your work as you would for a colleague. Partial credit requires reasonable support.

1. Ryan is building a toothpick sequence shown to the right.



(a) [2] Draw the next figure that Ryan would build.



looks like we add a  $= 1$  on the left (so adding 3 toothpicks)

(b) [3] If Ryan builds 10 figures in all, how many total toothpicks does he use?

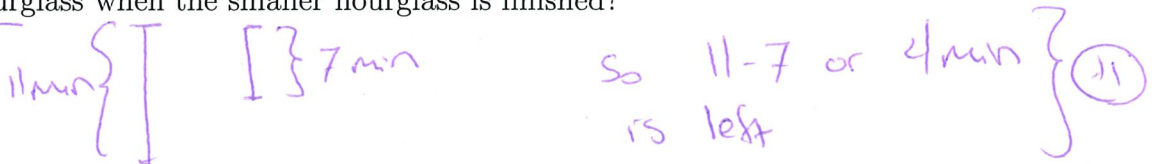
Figure 1 + Fig 2 + Fig 3 + Fig 4 + Fig 5 + Fig 6 + Fig 7 + Fig 8 + Fig 9 + Fig 10

$$4 + 7 + 10 + 13 + 16 + 19 + 22 + 25 + 28 + 31$$

$$11 + 23 + 35 + 47 + 59 = 34 + 82 + 59 = 175$$

2. We consider the following problem below: How can a chef use an 11-minute hourglass and a 7-minute hourglass to time vegetables that must steam for 15 minutes.

(a) [2] If a chef starts both hourglasses at the same time how much time is left on the large hourglass when the smaller hourglass is finished?



(b) [3] What kind of strategy (eg, drawing, tables, clever guessing & checking, models, work backwards, etc) might you try to solve this problem? Start using the strategy. (Note, the answer does not need to be found but the strategy needs to be used not just stated.)

Notice that  $11+4$  is the 15 min we need!  
 Went to use the 4min from (a)  
 Start both hourglasses  
 when 7min hourglass is done put in veggies  
 when 11min hourglass is done - turn over for the last 11 min

My strategy is working backwards. I need 15 how to get 15 from 11 & 7.

Activity Problems #1

Start 1.5

Pattern 1.5

Extra Practice #32

Start 1.5

Watch 1.5

Strategy 1.5

used 1

sense 1.5

understand prob 1

11

11