# Top Down / Bottom Up

A retractable flag pole starts out 24 inches tall, and grows taller at a rate of 0.6in/sec. An elastic is anchored 200 inches from the base and attached to the top of the pole, forming a right triangle. Using a top-down or bottom-up strategy, define functions that compute the *height* of the pole and the *area* of the triangle after a given number of seconds.

height(sec) = ?
area(sec) = ?

24"

200"
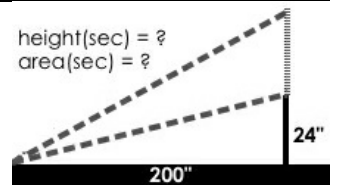
Directions: Define your first function (`height` or `area`) here.

Contract and Purpose Statement ☐

Every contract has three parts...

\# _____ :: _____ -> _____
    function name   *domain*   *range*

\# _____
                    what does the function do?

Examples ☐

Write some examples, then circle and label what changes...

examples:

_____ (_____) **is** _____
   function name   *input(s)*   *what the function produces*

_____ (_____) **is** _____
   function name   *input(s)*   *what the function produces*

end

Definition ☐

Write the definition, giving variable names to all your input values...

fun _____ (_____):
     function name   *variable(s)*

_____
            what the function does with those variable(s)

end

Directions: Define your second function (`height` or `area`) here.

Contract and Purpose Statement ☐

Every contract has three parts...

\# _____ :: _____ -> _____
    function name   *domain*   *range*

\# _____
                    what does the function do?

Examples ☐

Write some examples, then circle and label what changes...

examples:

_____ (_____) **is** _____
   function name   *input(s)*   *what the function produces*

_____ (_____) **is** _____
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Definition ☐

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     function name   *variable(s)*

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