

Solving Word Problems with the Design Recipe

Use The Design Recipe to create models for the word problems and write the appropriate functions.

<p>1) Write a function <code>globo-gym</code> that takes in a number of months and produces the cost for attending the gym that many months when there is a \$150 initiation fee and a monthly fee of \$45/month.</p> <pre>(define (globo-gym months) (+ (* 45 months) 150))</pre>	<p>2) Write a function <code>rect-perimeter</code> that takes in the length and width of a rectangle and returns the perimeter of that rectangle.</p> <pre>(define (rect-perimeter l w) (* 2 (+ l w)))</pre>
<p>3) Write a function <code>lawn-area</code> that takes in a length and width of a lawn and returns the area of that rectangular lawn.</p> <pre>(define (lawn-area length width) (* length width))</pre>	<p>4) Write a function <code>rectprism-vol</code> that takes in the length, width, and height of a rectangular prism and returns the Volume of a rectangular prism.</p> <pre>(define (rectprism-vol l w h) (* (* l w) h))</pre>
<p>5) Write a function <code>rideshare</code>, that takes in a number of miles and produces the cost of a ride for that many miles at \$2.50 plus \$1.50/mile.</p> <pre>(define (rideshare miles) (+ (* 1.5 miles) 2.5))</pre>	<p>6) Write a function <code>marquee</code> that takes in a message and returns that message in large gold letters.</p> <pre>(define (marquee message) (text message 100 "gold"))</pre>
<p>7) Write a function <code>split-tab</code> that takes in a cost and the number of people sharing the bill and splits the cost equally.</p> <pre>(define (split-tab cost people) (/ cost people))</pre>	<p>8) Write a function <code>num-cube</code> that takes in a number and returns the cube of that number.</p> <pre>(define (num-cube n) (* (* n n) n))</pre>
<p>9) Write a function <code>circle-area</code> that takes in a radius and returns the area of the circle.</p> <pre>(define (circle-area radius) (* 3.14 (sqr radius)))</pre>	<p>10) Write a function <code>tip-calculator</code> that takes in the cost of a meal and returns the 15% tip of that meal.</p> <pre>(define (tip-calculator cost) (* 0.15 cost))</pre>
<p>11) Write a function <code>minimum-wage</code>, that takes in a number of hours worked and returns the amount a worker will get paid at \$10.25/hr.</p> <pre>(define (minimum-wage hours) (* 10.25 hours))</pre>	<p>12) Write a function <code>moving</code> that takes in the days and number of miles driven and returns the cost of renting a truck. The truck is \$55 per day and each driven mile is 15¢.</p> <pre>(define (moving days mi) (+ (* 55 days) (* 0.15 mi)))</pre>