

# 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 'globo-gym' 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 'rect-perimeter' 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 'lawn-area' 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 'rectprism-volume' 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 'rideshare', 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)   (+ (* 1.50 miles) 2.50))</pre>	<p>6. Write a function 'marquee' that takes in a message and returns that message in large gold letters.</p> <pre>(define (marquee my-message)   (text my-message 100 "gold"))</pre>
<p>7. Write a function 'split-tab' 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 'num-cube' that takes in a number and returns the cube of that number.</p> <pre>(define (num-cube number)   (* (* number number) number))</pre>	<p>9. Write a function 'circle-area' that takes in a radius and returns the area of the circle.</p> <pre>(define (circle-area radius)   (* pi (sqr radius)))</pre>
<p>10. Write a function 'tip-calculator' 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 'minimum-wage', that takes in a number of hours worked and returns the amount a worker will get paid at \$10.25/hour.</p> <pre>(define (minimum-wage hours)   (* 10.25 hours))</pre>	<p>12. Write a function 'moving-truck' 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-truck days miles) (+ (* 55 days) (* .15 miles)))</pre>