

PROBLEM-OF-THE-DAY: ALGEBRA 1**WEEK:** October 2 to October 5**DAY:** Tuesday

RISD Objective: Provided the equation of a function, students will evaluate the function for a particular value of x . Or students will determine the value of x if given the function value.

PROBLEM #30

Henrietta designs websites for individuals and businesses. Since she charges a \$50.00 consultation fee plus \$24.00 per hour in labor, a function that would describe her charges would be

$$C(h) = 24h + 50$$

where $C(h)$ is the cost function for the number of hours, h .

- a) How much would Henrietta charge a client for a job that takes 13 hours? Show your work.**
- b) How many hours did Henrietta work if she charges a client \$542.00? Explain and show how you get your answer.**

MODEL SOLUTION #30

a) Since the cost function is $C(h) = 24h + 50$, to find the charge for 13 hours of work, I need to substitute 13 in for h .

$$\begin{aligned} C(13) &= 24(13) + 50 \\ &= 312 + 50 \\ &= 362 \end{aligned}$$

So, Henrietta would charge her client \$362.00 for 13 hours of work.

b) In this case we know the charge, which is \$542.00, therefore we will substitute this in for the function and solve for h .

$$542 = 24h + 50$$

$$492 = 24h$$

$$492/24 = h$$

$$20\frac{1}{2} = h$$

So, if Henrietta charges \$542.00, she worked $20\frac{1}{2}$ hours.