Analyzing Functions

1. The cost to manufacture p pairs of jeans can be represented by a function C(p). Correctly complete the statement below.

If C(5) = 382, then 5 pairs of jeans cost $382 to manufacture.

2. The number of calories someone burns on the treadmill running at a steady pace for m minutes can be modeled by the a function B(m). Correctly complete the statement. If B(10) = 90, then this person burns 90 calories in 10 minutes.

3. The perimeter of a rectangle with a fixed height and a width of w units can be modeled by the function P(w). If P(2.5) = 12.5, determine the width, perimeter, and height of the rectangle.

$P(w)=12.5$
$P(2.5)=12.5$
$12.5=2(2.5)+2h$
$7.5=2h$
$h=3.75$ units

Writing Functions

1. a. The perimeter of a square is a function of the side length of the square. Write a function rule for the perimeter of a square p(s).

$P(s)=4s$

b. What is the domain of p(s)?

possible side lengths $s \geq 0$

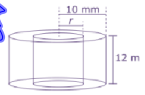
2. a. The total amount you spend at a special 99-cent store is a function of the number of items you purchase. Assuming there is no tax if you purchase less than 20 items, write a function rule to model this situation.

$C(x)=.99x$
x is # of items

b. What is the domain of your function?

# of items $\{0,1,2,3,4,\ldots,17,18,19\}$

3. a. The volume of any given cylinder is given as $V = \pi r^2 h$. Write a function, V(r), for the volume of the cylinder, assuming the innermost cylinder is cut out



b. If the innermost cylinder must have an integer radius greater than or equal to three mm, what is the domain of V?