MT-A141 Precalculus Worksheet 1.2/1.3

Group: _____ Present: _____

1. Find the domain of the function $f(x) = \frac{x}{\sqrt{(x-3)(x+2)}}$ algebraically.

   Domain = _____

   Next, graph $y = f(x)$ to check your algebraic solution.

   Based on your graph, what do you conjecture the range of the function to be?

   Range = _____

2. A 50 foot by 30 foot rectangular site is to be covered in grass sod, except for a concrete path on two adjacent sides. Suppose the grass sod costs \$3 per square foot and the concrete path costs \$20 per square foot.
   Find a formula for the function which expresses the cost of these improvements as a function of the width x of the path.
   (Hint: draw a picture first)

   Cost function $C(x) =$ _____

   What is the domain of your function? Domain = _____

   What is the range of your function? Range = _____

3. Find a viewing window which makes the graph of $y = -2x$ pass through both the top left and bottom right corners of the calculator window, when XMIN $= -10$ and XMAX $= 10$.

   [_____, _____] $\times$ [_____, _____]