Supplemental Calculus

This is a collection of activities for Supplemental Calculus.

Functions and Graphs

1.1 Functions

Supplemental Calculus

The purpose of these activities is to better understand functions and their graphs. But really to practice with Ximera.

Every square has both a perimeter p and an area A. In other words, there is a relationship between the set of perimeters of squares and the set of areas of squares. Is this relationship a function?

Exercise 1 *If $p = 20$, then $A =$* $\boxed{25}$.

Hint: *What is the side length of a square with this perimeter?*

Exercise 2 *If $A = 36$ then $p =$* $\boxed{24}$.

Hint: *What is the side length?*

Solution If the area is 36, then the side length must be 6, since $6 \times 6 = 36$. The perimeter is 4 times the side length, so the perimeter is 24.

Question 3 *Every square is also a* $\underset{\textit{choice}}{\boxed{\textit{rectangle}}}$

This is the end of the activity. Really.

Learning outcomes:
Learning outcomes:

Manipulating Expressions

2.1 Factoring

Supplemental Calculus

Our next goal is to recall how to factor. What does this even mean?

When we factor, we break up an expression into its parts, such that when you *multiply* all the parts together, you get the expression. That is, we are decomposing the expression into its "factors" – parts with respect to multiplication.

Supplemental Calculus

Before we can factor polynomials, let's review how we factor numbers.

What does it mean to *factor*? To get a feel for this, we will try some simple number factoring problems.

Problem 1 *What is the smallest factor of 45?* $\boxed{3}$

Which is not a factor of 54?

Multiple Choice:

(a) 3

(b) 5 ✓

(c) 9

Learning outcomes:
Learning outcomes: