Example activity collection

Bart Snapp

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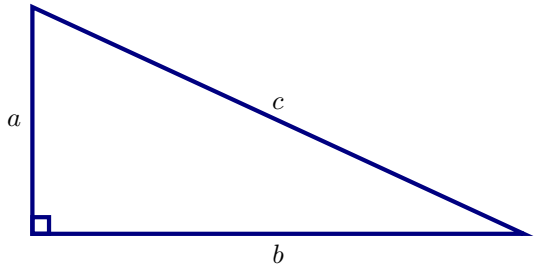
1 First example

In this activity we see some examples.

To start we can have theorem environments:

Theorem 1. *Given a right triangle:*



We have that:

$$a^2 + b^2 = c^2$$

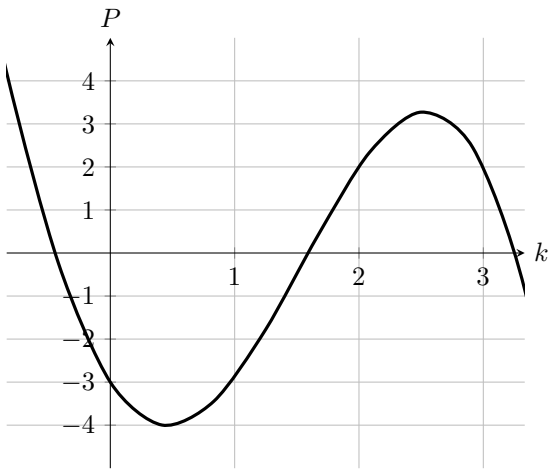
Exercise 1 $3 \times 2 =$

Exercise 2 *Given that* $r(v) = -2v^2 - 4v - 4$, *evaluate* $r(-0.4)$. *Express your answer in decimal notation.*

The value of the function $r(v) = -2v^2 - 4v - 4$, *evaluated at* $v = -0.4$, *is* .

Question 3 *What is the worst kind of cat?*

Question 4 *In the plot below, is P a function of k?*



Use the plot to compute $P(2)$.

Question 5 *Enter the matrix* $\begin{bmatrix} x & y \\ xy & z+1 \end{bmatrix}$

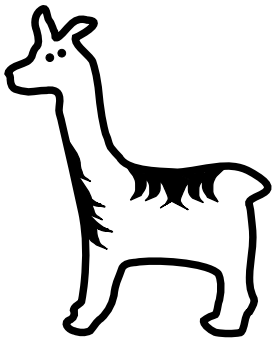
2 Second example

In this activity we give a second example.

Here we have a multi-part question with free-response.

Question 1 *Suppose you are standing on a bridge that is 60 meters above sea-level. You toss a ball up into the air with an initial velocity of 30 meters per second. If t is the time (in seconds) after we toss the ball, then the height at time t is approximately $f(t) = -5t^2 + 30t + 60$. What does $f(2)$ mean in our context? Now suppose t is such that $f(t) = 100$. What does this mean in our context? Finally, if h is a small positive value what is the meaning of $f(t + h)$? How does this compare to the meaning of $f(t) + h$?*

Here is a picture of a llama:



If you like, check out this video[1].

Exploration 2 *Write a Python script that will compute factorial for you.*

[1] YouTube link: http://www.youtube.com/watch?v=0aQpLSu2fMs