## Unit 2 Lesson 18: Graphs of Rational Functions (Part 2)

### 1 Rewritten Equations (Warm up)

#### Student Task Statement

Decide if each of these equations is true or false for  values that do not result in a denominator of 0. Be prepared to explain your reasoning.

### 2 Publishing a Paperback

#### Student Task Statement

Let be the function that gives the average cost per book , in dollars, when using an online store to print copies of a self-published paperback book. Here is a graph of



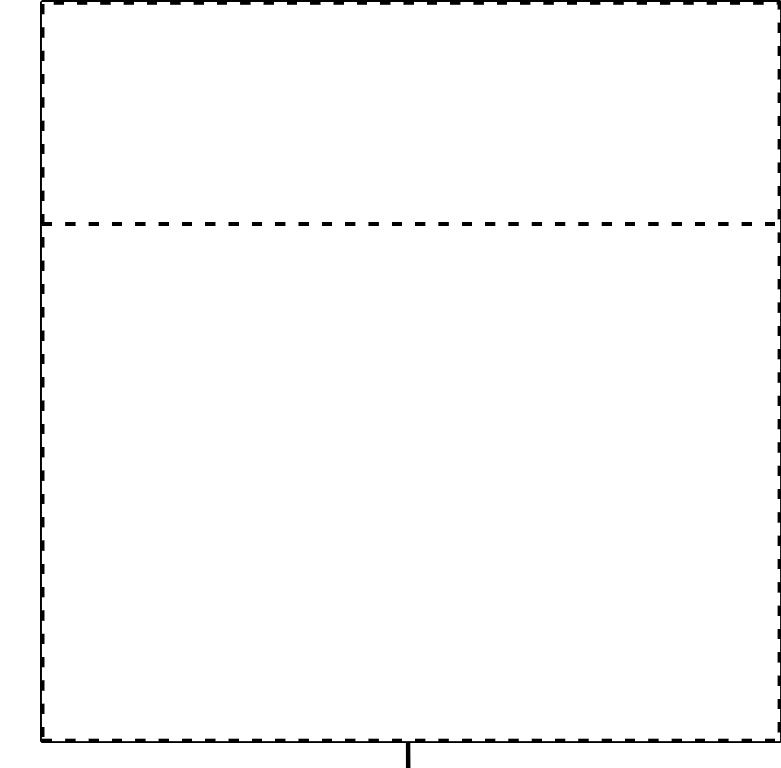
1. What is the approximate cost per book when 50 books are printed? 100 books?
2. The author plans to charge $8 per book. About how many should be printed to make a profit?
3. What is the value of when ? How does this relate to the context?
4. What does the end behavior of the function say about the context?

### 3 Horizontal Asymptotes

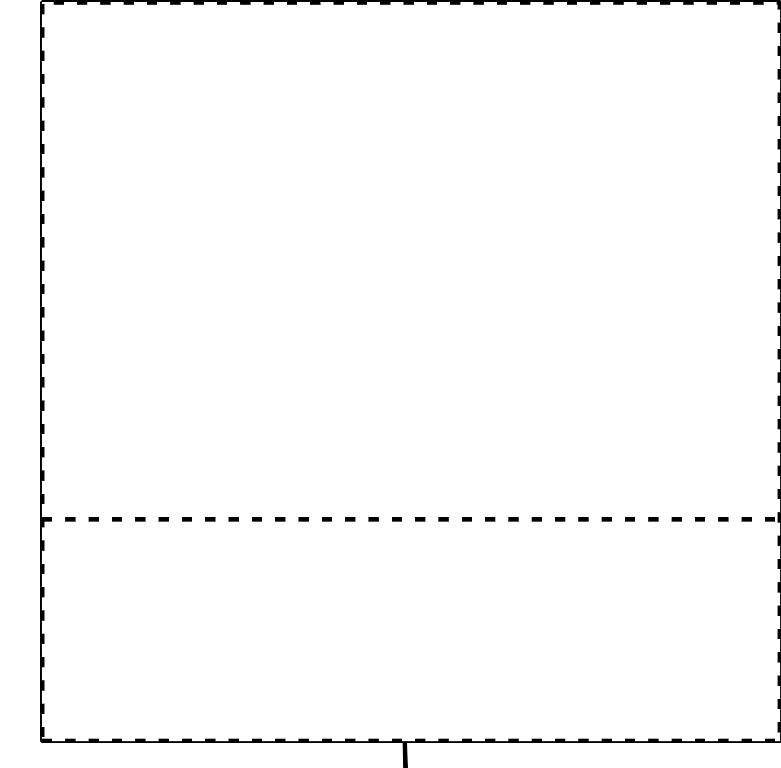
#### Student Task Statement

Here are four graphs of rational functions.

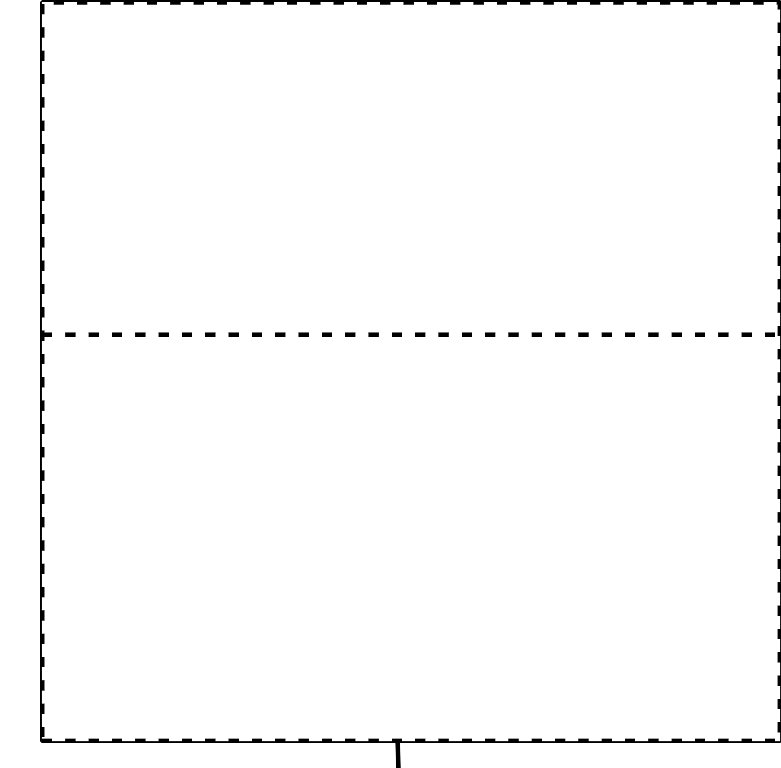
A



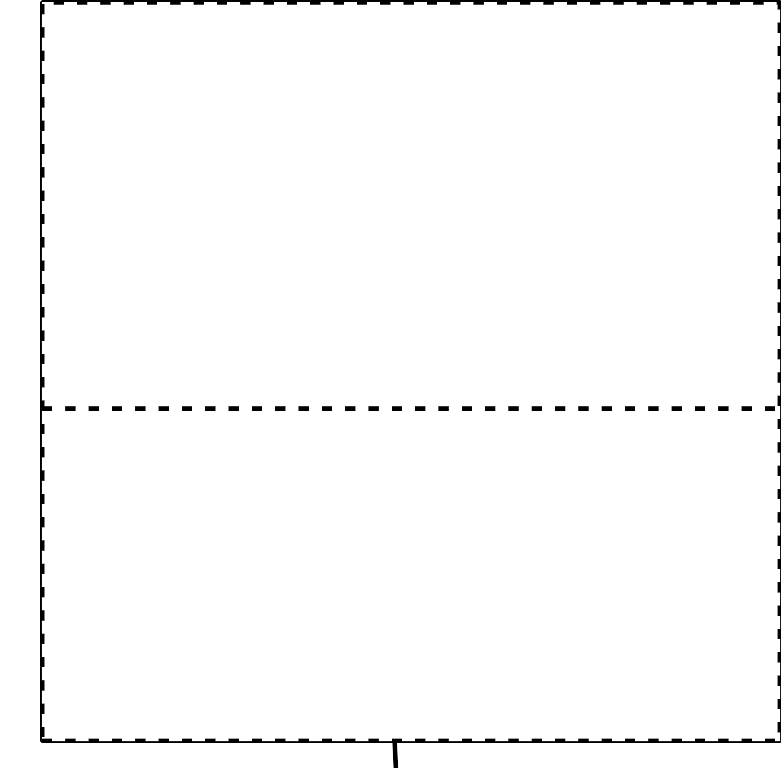
B



C



D



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1. Match each function with its graphical representation.
2. Where do you see the **horizontal asymptote** of the graph in the expressions for the functions?



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