

# Questions on Factoring Review

#2 WKS?

$$\begin{aligned} (18) \quad & 20u^4 + 54u^2 + 36 \\ & 2(10u^4 + 27u^2 + 18) \\ & 2(2u^2 + 3)(5u^2 + 6) \end{aligned}$$

$$\begin{array}{c} \cancel{180} \\ \frac{6}{5u^2} = \frac{12}{10u^2} \quad \frac{15}{27} = \frac{5}{9} \\ \frac{3}{2u^2} \end{array}$$

# 4.1 The Gift

## A Develop Understanding Task



Part I: Chile is celebrating her Quinceañera

Chile is celebrating her Quinceañera. Hannah knows the perfect gift to buy Chile, but it costs \$360. Hannah can't afford to pay for this on her own so thinks about asking some friends to join in and share the cost.

- How much would each person spend if there were two people dividing the cost of the gift? How much would each person spend if there were three people dividing the cost? Five people? Ten? One hundred?

P	C
2	180
3	120
5	72
10	36
100	3.6

(360 ÷ 2)  
(360 ÷ 3)

$$\frac{360}{x} = y$$

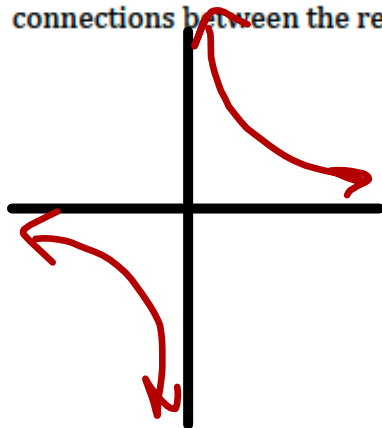
x = # of people

y = cost / person

- Determine the function that could be used to model the amount each person would spend depending on the number of people contributing to the gift.

$$y = \frac{360}{x} \quad \text{or} \quad C = \frac{360}{P}$$

3. Use multiple representations to show how the amount each person would contribute to the gift would change depending on the number of people contributing. Describe the connections between the representations.



4. Describe the features of the function based on the context (domain/range,  $\frac{360}{x}$ , increasing/decreasing, maxima/minima, discrete/continuous, end behavior, intercepts, asymptotes).

domain:  $(-\infty, 0) \cup (0, \infty)$  OR

$x > 0$  and  
 $x < 0$

range:  $(-\infty, 0) \cup (0, \infty)$  OR

$y > 0$  and  
 $y < 0$

decreasing everywhere  
no max or min

intercepts:  
none

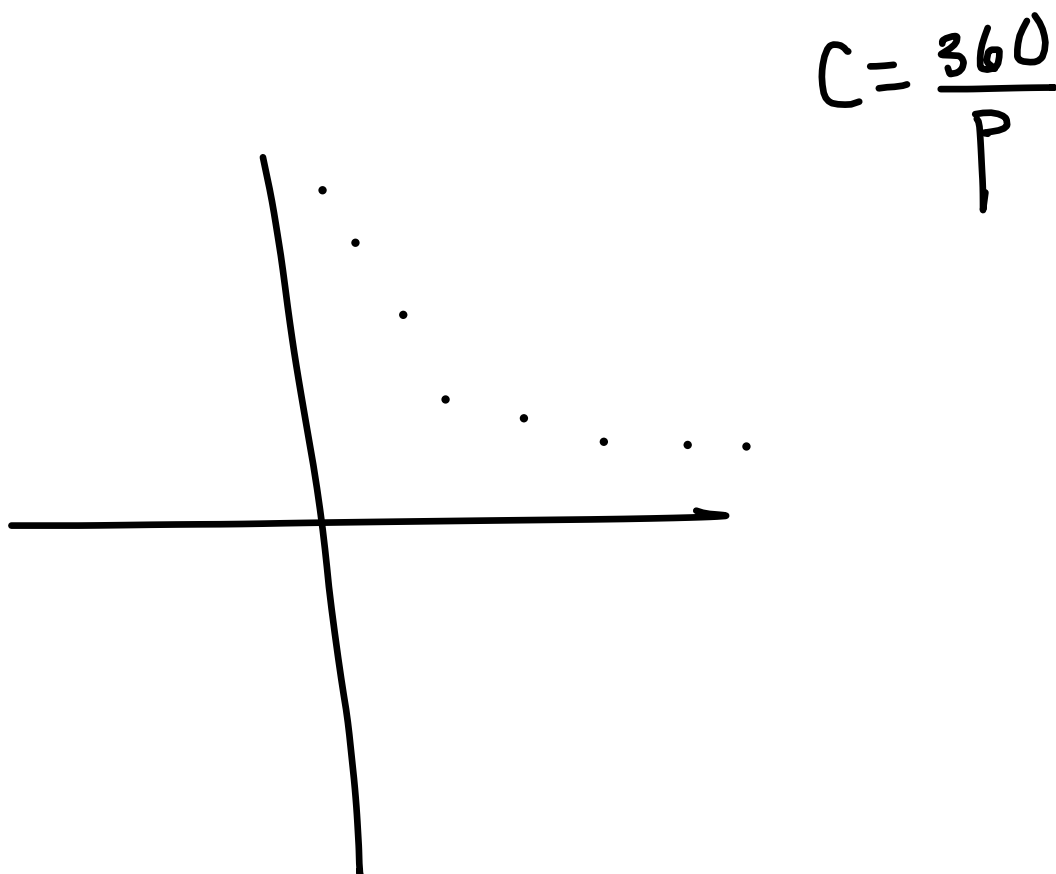
continuous

e.b: As  $x \rightarrow -\infty$ ,  $f(x) \rightarrow 0$

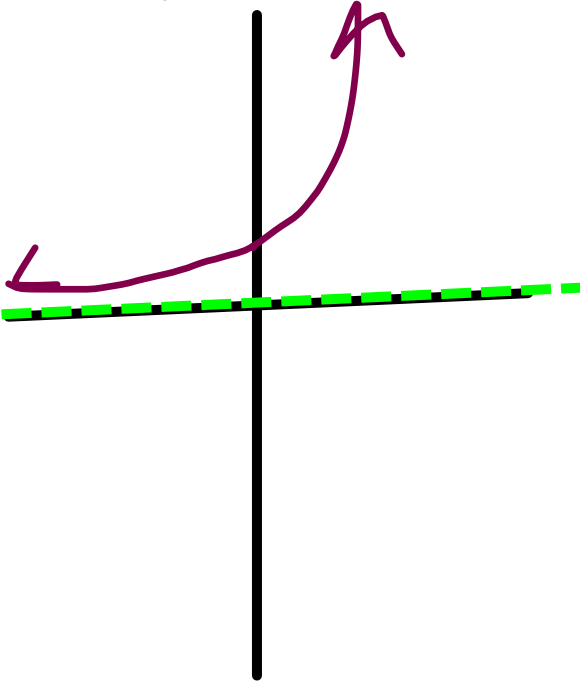
As  $x \rightarrow \infty$ ,  $f(x) \rightarrow 0$

vertical asy. at  $x = 0$

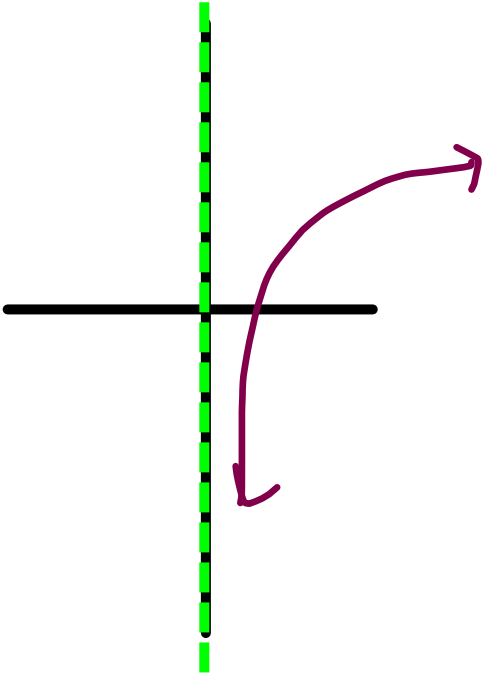
Horizontal  
asy. at  
 $y = 0$



exponential



log



# Homework/Classwork

## 4.1 Ready, Set, Go