

# Quiz Review Answers

Algebra II: Review 8.1-8.3  
Date:

Name: Key  
Period:

The variables  $x$  and  $y$  vary inversely. Use the given values to write an equation relating  $x$  and  $y$ . Then, find  $y$  when  $x = 3$ .

1.  $x = 9, y = 2$

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

$$2 = \frac{a}{9}$$

$$a = 18$$

$$\text{equation: } y = \frac{18}{x}$$

$$y = \underline{6}$$

2.  $x = 3, y = -6$   $a = -18$

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

$$-6 = \frac{a}{3}$$

$$\text{equation: } y = \frac{-18}{x}$$

$$y = \underline{-6}$$

3.  $x = -12, y = \frac{3}{4}$   $a = -9$

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

$$\frac{3}{4} = \frac{a}{-12}$$

$$\text{equation: } y = \frac{-9}{x}$$

$$y = \underline{-3}$$

4.  $x = -\frac{1}{2}, y = -24$   $a = 12$

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

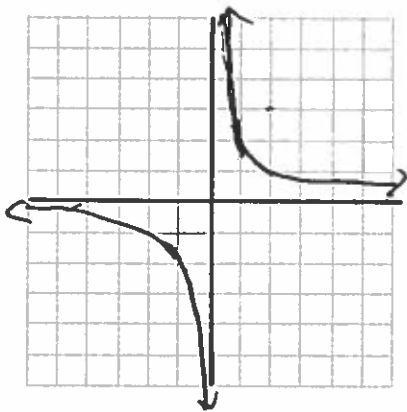
$$-24 = \frac{a}{-\frac{1}{2}}$$

$$\text{equation: } y = \frac{12}{x}$$

$$y = \underline{4}$$

Graph the function. Identify any zeros, any vertical asymptotes, any horizontal asymptotes, and state the domain and range.

5.  $y = \frac{3}{2x}$

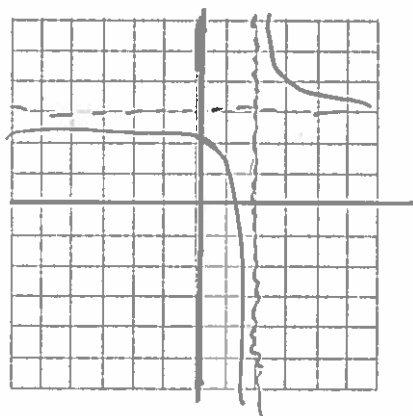


Asymptotes:  $y = 0, x = 0$

Domain  $x \neq 0$

Range  $y \neq 0$

6.  $y = \frac{4}{x-2} + 3$



Asymptotes:  $x = 2, y = 3$

Domain  $x \neq 2$

Range  $y \neq 3$

7.

$$y = \frac{-2x}{3x-6}$$

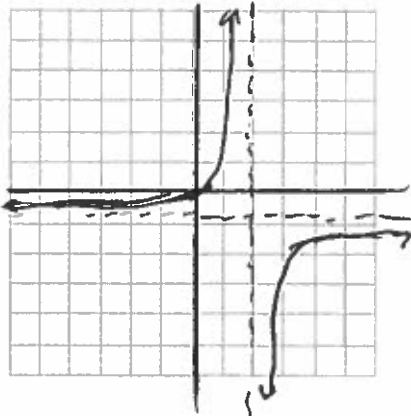
$$A1$$

$$y = \frac{-2}{3}$$

$$3x-6=0$$

$$x=2$$

A1



Asymptotes:  $y = -\frac{2}{3}, x = 2$

Domain  $x \neq 2$

Range  $y \neq -\frac{2}{3}$

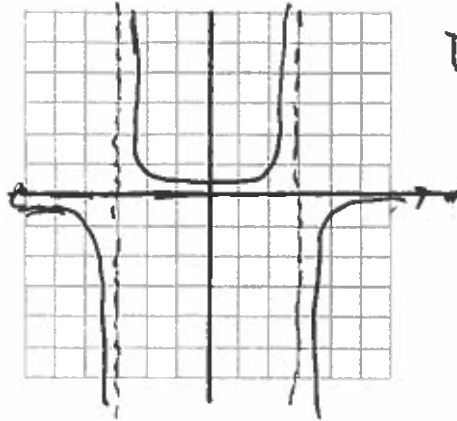
8.

$$y = \frac{-3}{x^2-9}$$

$$x^2-9=0$$

$$A1: x = \pm 3$$

$$A1: y = 0$$



D:  $x \neq \pm 3$

R:  $y \neq 0$

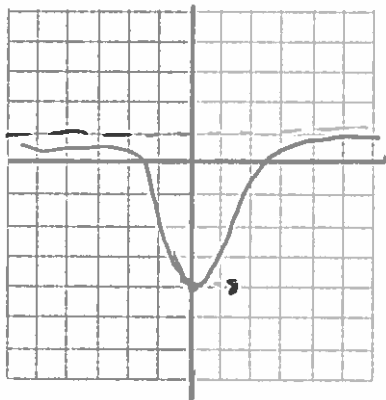
Asymptotes:  $y = 0, x = \pm 3$

Domain  $x \neq \pm 3$

Range  $y \neq 0$

9.

$$y = \frac{x^2-16}{x^2+2}$$



Asymptotes:  $y = 1$  No  $x$ -asymptote

Domain  $x \in \mathbb{R}$

Range  $y \neq 1$

10.

The variable  $z$  varies jointly with  $x$  and  $y$ . Also,  $z = 60$  when  $x = -4$  and  $y = 5$ . Write an equation that relates  $x$ ,  $y$ , and  $z$ . Find  $z$  when  $x = 7$  and  $y = 2$ .

$$a = -3$$

$$\text{equation } z = -3xy$$

$$z = -42$$

$$z = axy$$

$$60 = a(-4)(5)$$

$$a = \frac{60}{-20} = -3$$

$$z = -3(7)(2)$$