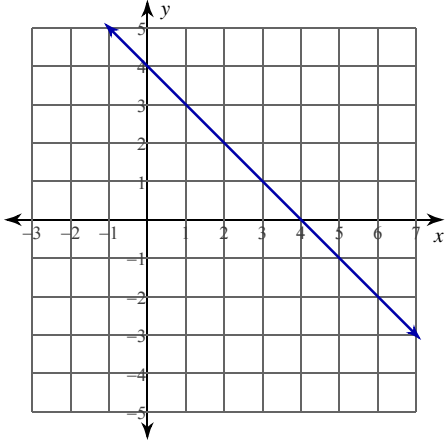


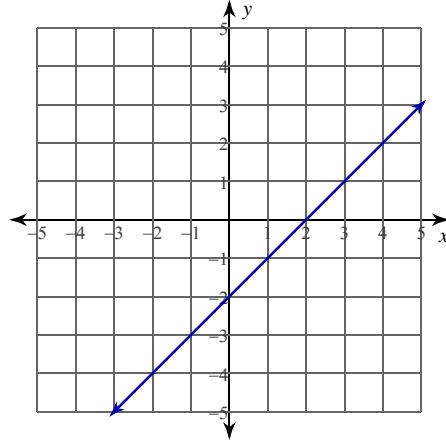
# Lesson 7.4 Worksheet: Reciprocal Graphs

Graph each equation. List the domain, range, equation(s) of any asymptote(s), and the invariant point(s).

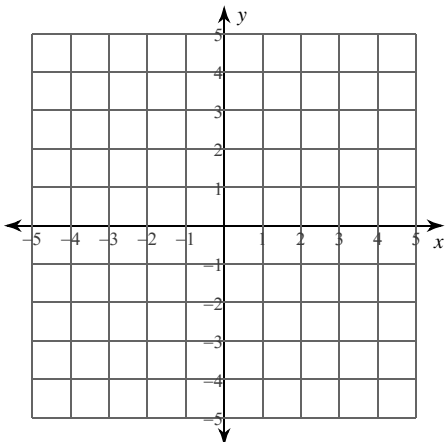
1)  $y = \frac{1}{-x + 4}$



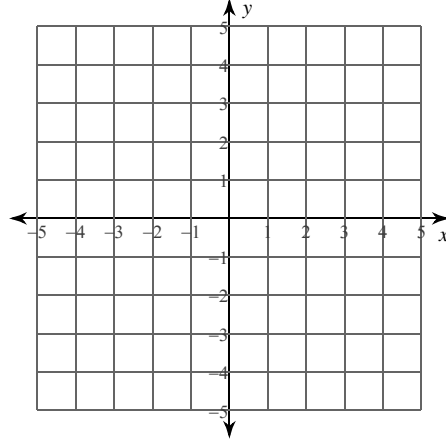
2)  $y = \frac{1}{x - 2}$



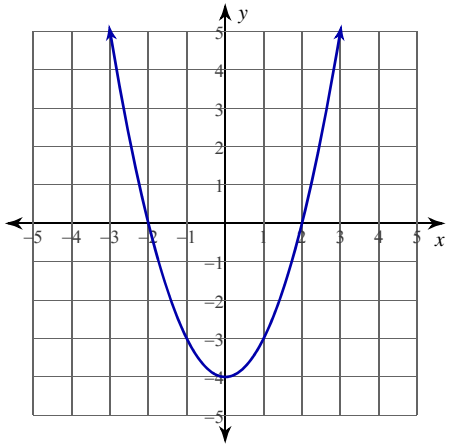
3)  $y = \frac{1}{-\frac{1}{2}x - 1}$



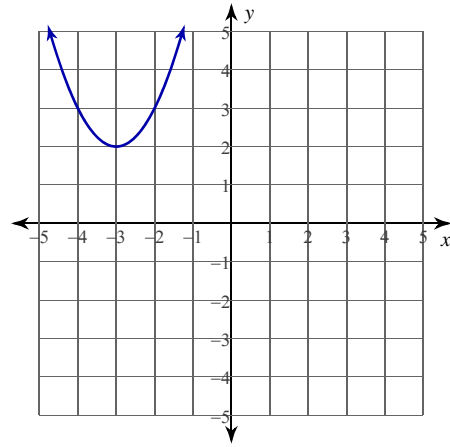
4)  $y = \frac{1}{2x + 3}$



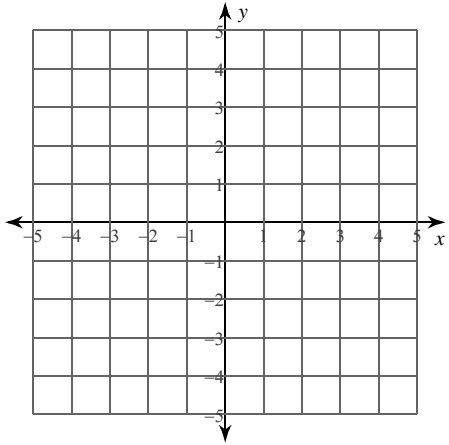
$$5) y = \frac{1}{x^2 - 4}$$



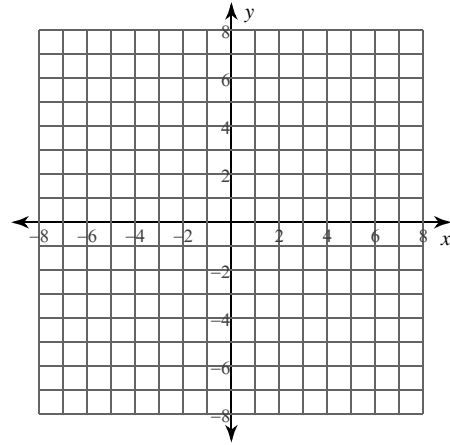
$$6) y = \frac{1}{x^2 + 6x + 11}$$



$$7) y = \frac{1}{-x^2 + 6x - 9}$$

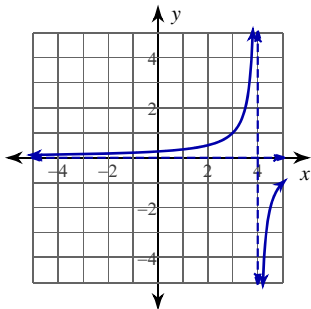


$$8) y = \frac{1}{2x^2 + 16x + 24}$$



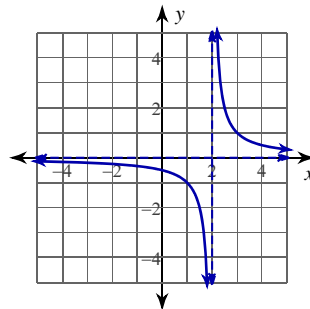
# Answers to Lesson 7.4 Worksheet: Reciprocal Graphs

1)



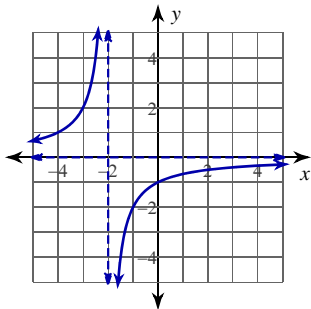
$x \neq 4, y \neq 0, x = 4, y = 0, (3, 1), (5, -1)$

2)



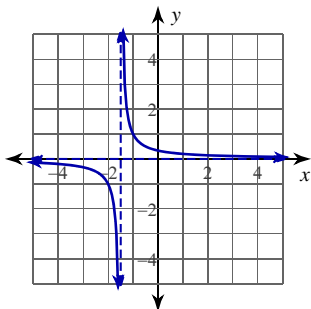
$x \neq 2, y \neq 0, x = 2, y = 0, (3, 1), (1, -1)$

3)



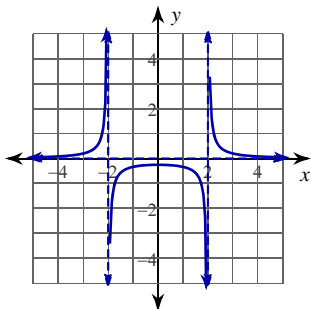
$x \neq -2, y \neq 0, x = -2, y = 0, (-4, 1), (0, -1)$

4)



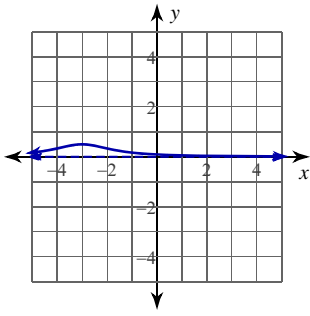
$x \neq -1.5, y \neq 0, x = -1.5, y = 0, (-1, 1), (-2, -1)$

5)



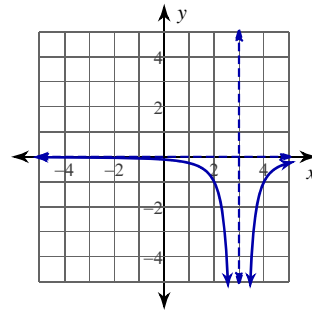
$x \neq -2, x \neq 2, y > 0, y \leq -\frac{1}{4}, x = -2, x = 2, y = 0, (-\sqrt{5}, 1), (\sqrt{5}, 1), (-\sqrt{3}, -1), (\sqrt{3}, -1)$

6)



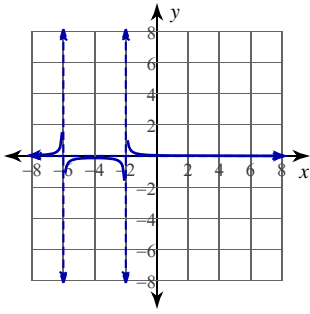
$x$  is all real numbers,  $0 < y \leq \frac{1}{2}$ ,  $y = 0$

7)



$x \neq 3$ ,  $y < 0$ ,  $x = 3$ ,  $y = 0$ ,  $(2, -1)$ ,  $(4, -1)$

8)



$x \neq -6$ ,  $x \neq -2$ ,  $y \neq 0$ ,  $x = -6$ ,  $x = -2$ ,  $y > 0$ ,  $y \leq -\frac{1}{8}$ ,  $\left(\frac{-8 + 3\sqrt{2}}{2}, 1\right)$ ,  $\left(\frac{-8 - 3\sqrt{2}}{2}, 1\right)$ ,  
 $\left(\frac{-8 + \sqrt{14}}{2}, -1\right)$ ,  $\left(\frac{-8 - \sqrt{14}}{2}, -1\right)$