

61. For the function $h(x) = \frac{x+1}{x^2-4}$, graph and state the following:

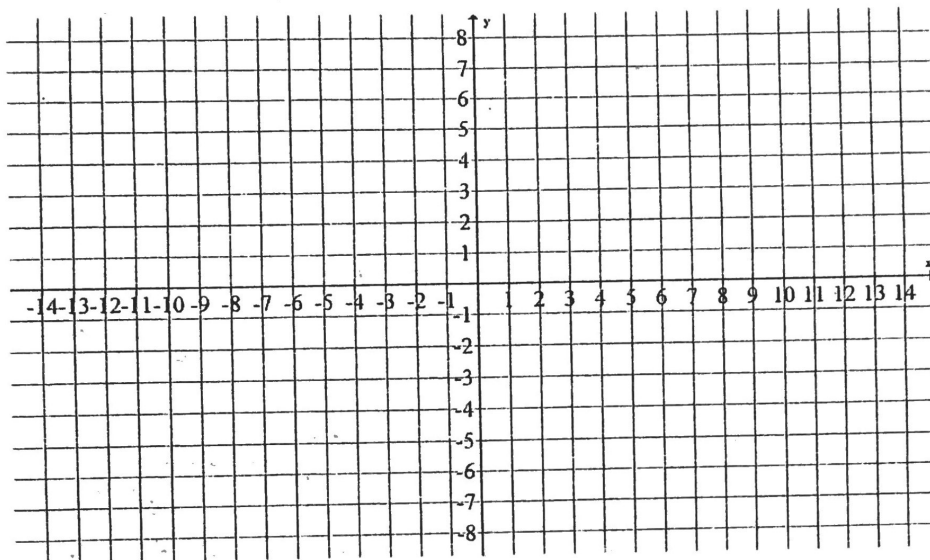
Vertical Asymptote: $x=2, x=-2$ Domain: $(-\infty, -2) \cup (-2, 2) \cup (2, \infty)$

Horizontal Asymptote: $y=0$

Zeros: -1

y-int: $(0, -1/4)$

End Behavior: $x \rightarrow -\infty, f(x) \rightarrow 0$
 $x \rightarrow \infty, f(x) \rightarrow 0$



62. Determine if there are any holes in the graph of the function $g(x) = \frac{x^2-4}{x^2-3x+2}$. If so, what are they?

$$\frac{(x-2)(x+2)}{(x-2)(x-1)}$$

Holes: $x=2$

$$x-2=0$$

63. Find the slant asymptote for the following function: $h(x) = \frac{x^2+5}{x-1}$.

SA: $y = x+1$

$$\begin{array}{r} x+1 \\ x-1 \overline{) x^2 + 0x + 5} \\ \underline{-x + x} \\ x + 5 \\ \underline{-x + 1} \\ 6 \end{array}$$

64. The resistors are in ohms.

$$\frac{1}{2}$$

$$3x(x)$$

$$3x^2$$

$$3x$$

$$(3x)$$

$$x$$

65. The fast...

64. There are two resistors in series: the second has twice the resistance of the first one. The parallel resistor has a resistance that is 1 ohm more than the first in series. The entire circuit has a resistance of 2 ohms. Find the strength of each resistor.

$$\frac{1}{2} = \frac{1}{x+1} + \frac{1}{3x}$$

$$3x(x+1) = 2(3x) + 2(x+1)$$

$$3x^2 + 3x = 6x + 2x + 2$$

$$3x^2 - 5x - 2 = 0$$

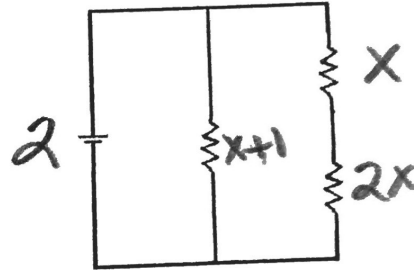
$$(3x+1)(x-2) = 0$$

$$x = -\frac{1}{2} \quad x = 2$$

$$R = \underline{2\Omega}$$

$$R = \underline{4\Omega}$$

$$R = \underline{3\Omega}$$



65. Working together, Mike and Will can set up the chairs for graduation in 2 hours. Will works 4 times as fast as Mike. How long would it take each of them to complete the job, working alone?

$$\frac{2}{x} + \frac{2}{4x} = 1$$

$$8 + 2 = 4x$$

$$10 = 4x$$

$$2.5 = x$$

$$\text{Will} = \underline{2.5 \text{ hrs.}}$$

$$\text{Mike} = \underline{10 \text{ hrs.}}$$