Graph this rational function.

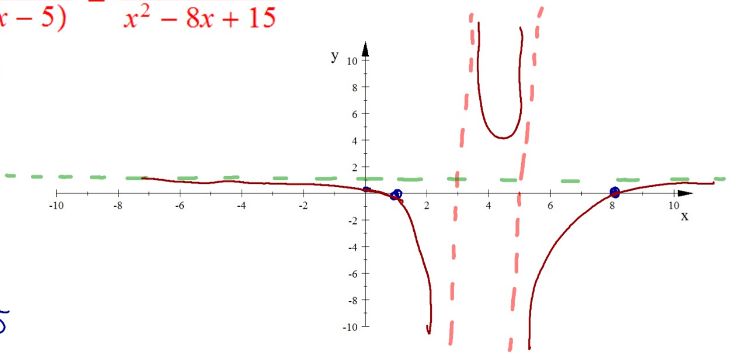
$$y = \frac{(x-1)(x-8)}{(x-3)(x-5)} = \frac{x^2 - 9x + 8}{x^2 - 8x + 15}$$

X-int: 1, 8

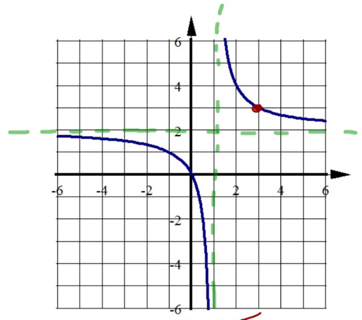
VA:
$x = 3, 5$

HA: $y = 1$

y-int $= 8/15$



Write the equation of this graph which is a transformation of $y = \frac{2}{x}$



2up

1RT

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

$\sqrt{}$ This is called a radical symbol

it indicates finding a root.

This is called the Index.
It tells what
root you are to find.

$\sqrt[n]{a}$

Nothing written here indicates
Square Root.

This is called the
Radicand

Looking ahead to Chapter 7: Below are skills that will be used again in Chapter 7.

Simplify each:

1. $\sqrt{396}$

$\sqrt{9 \cdot 44}$ or $\sqrt{36 \cdot 11}$

$3\sqrt{44}$ $\quad$ $6\sqrt{11}$

$3\sqrt{4 \cdot 11}$

$3 \cdot 2\sqrt{11}$

$6\sqrt{11}$

2. $\sqrt{637}$

$\sqrt{49 \cdot 13}$

$7\sqrt{13}$

Simplify each:

3. $\sqrt{30} \cdot \sqrt{66}$

$\sqrt{6\cdot 5} \cdot \sqrt{6\cdot 11}$

$\sqrt{6\cdot 5\cdot 6\cdot 11}$

$\sqrt{6^2\cdot 5\cdot 6}$

$6\sqrt{55}$

If you notice the two radicands have a common factor you can speed up the simplifying.

4. $\sqrt{50} + 7\sqrt{18} + 5\sqrt{12}$

$\sqrt{25\cdot 2}$ $\quad \sqrt{9\cdot 2}$ $\quad \sqrt{4\cdot 3}$

$\underbrace{5\sqrt{2} + 21\sqrt{2}} + 10\sqrt{3}$

$26\sqrt{2} + 10\sqrt{3}$

You can only combine terms if they have the same radical and same radicand.

Simplify each:

1. $\sqrt{507}$

$\sqrt{3\cdot 169}$

$\boxed{13\sqrt{3}}$

Simplify each:

2. $\sqrt[3]{40}$

$\sqrt[3]{8\cdot 5}$

$2\sqrt[3]{5}$

Make a list of perfect cubes:
8
27
64
125
216

3. $\sqrt[3]{192}$

$\sqrt[3]{64\cdot 3}$

$4\sqrt[3]{3}$

Simplify each:

4. $\sqrt[4]{162}$

$\sqrt[4]{2\cdot 81}$

$3\sqrt[4]{2}$

Make a list of perfect 4th powers:
16
81
256

5. $\boxed{}$