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The idea for function card match games was introduced to me by Gina Griffin-Evans.

Rational Function Match

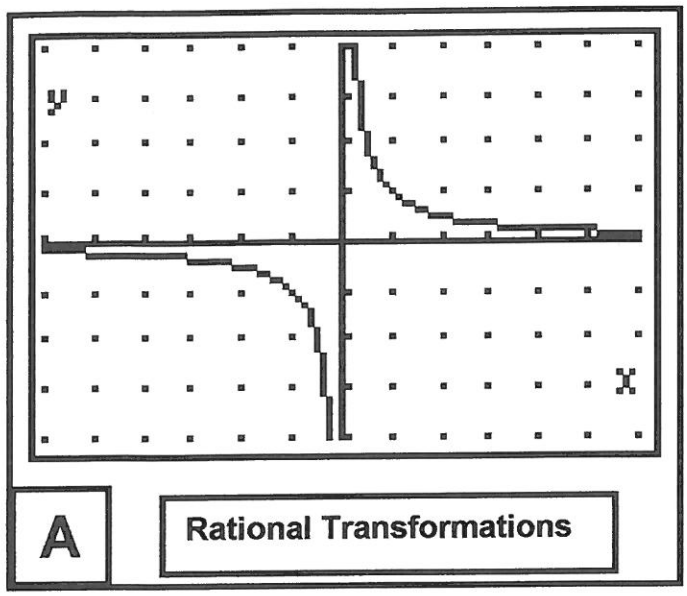
Play in groups of four students.

Rational Function Match

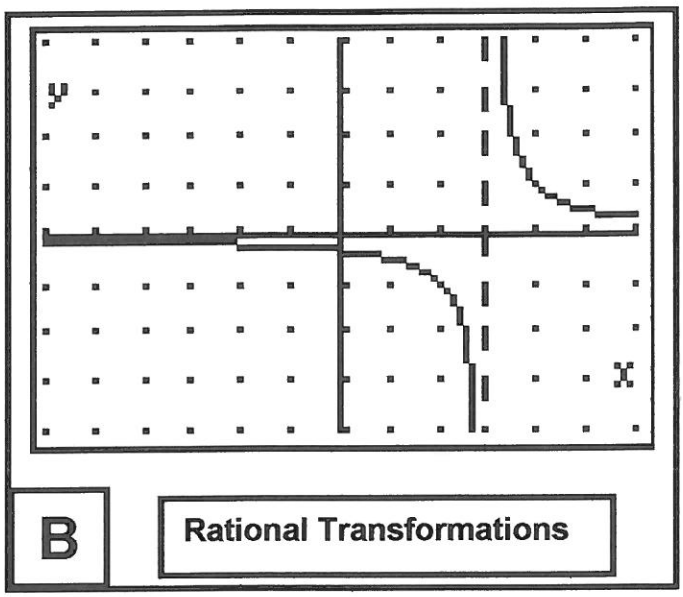
1) Separate cards by categories: graph, equation, asymptotes/holes.
2) Lay graphs down in alphabetical order.
3) Find two corresponding equation and asymptote/holes cards to make a 3-card match.
4) Record letters and numbers of cards on answer sheet grid.

TEACHER NOTE:
To make card sets, photocopy the following pages as a collated set of cards.
For a class of 28 make 7 collated sets.
Indicate the cards that belong to the same set using different colored paper for each set, or by marking the back of each card belonging to a set with a symbol. Use a different symbol for each set. If one card is found in a desk or on the floor you will be able to match it to the correct set easily.
Laminate each page.
Get 7 zip-lock bags, one for each card set.
Use a paper cutter to cut the cards for one set and seal in the zip-lock bag as you cut.
Sets can be easily stored in a plastic bin or larger zip-lock bag.

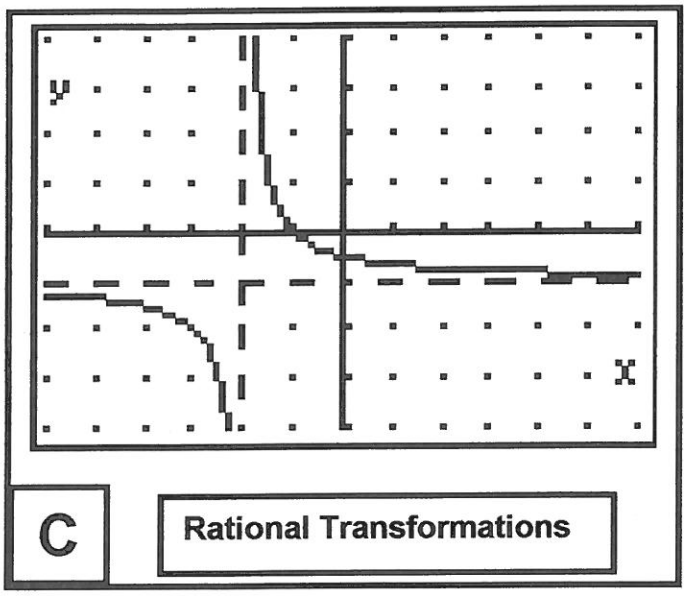
Photocopy a blank answer grid with the completed answer key on the reverse side. Laminate this sheet and store with the card sort. Photocopy blank grids as needed. A transparency of the answer key is also a convenient way to check student answers quickly.



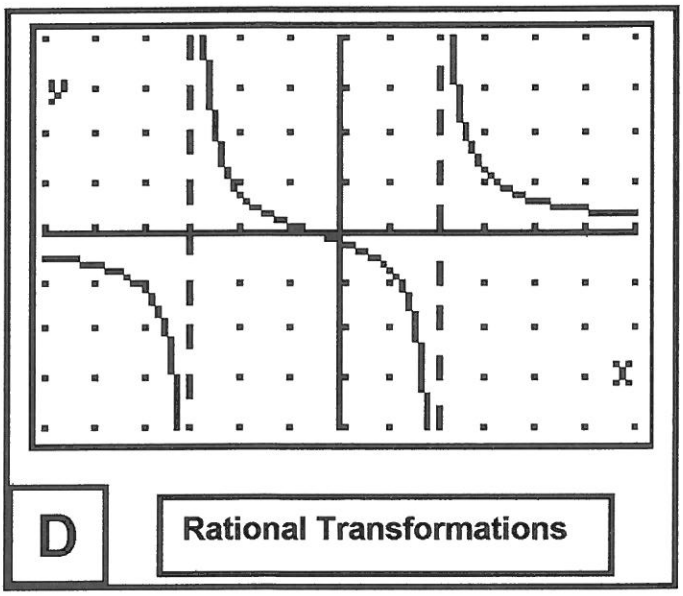
A Rational Transformations



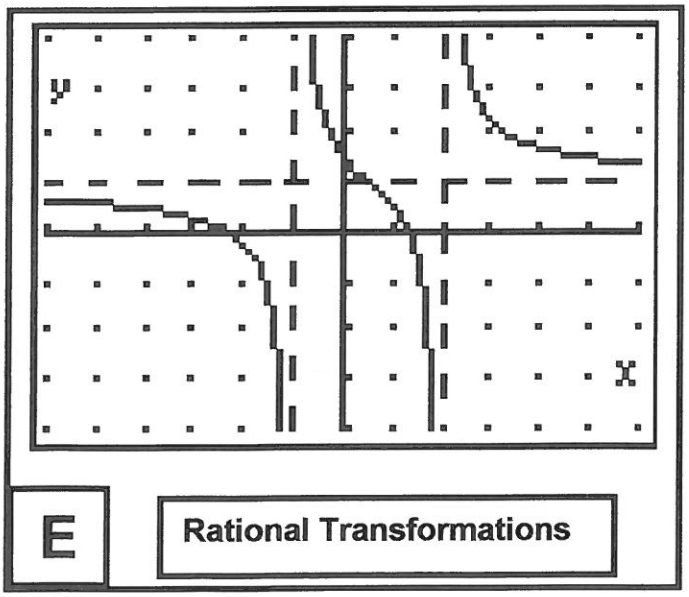
B Rational Transformations



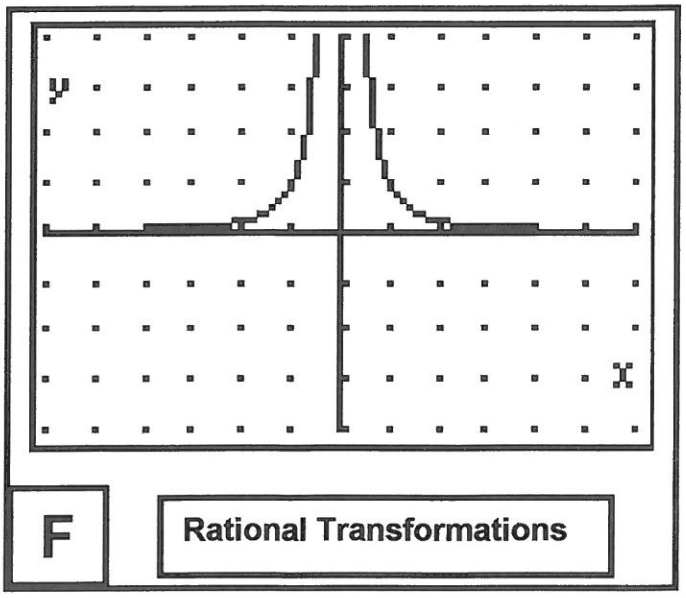
C Rational Transformations



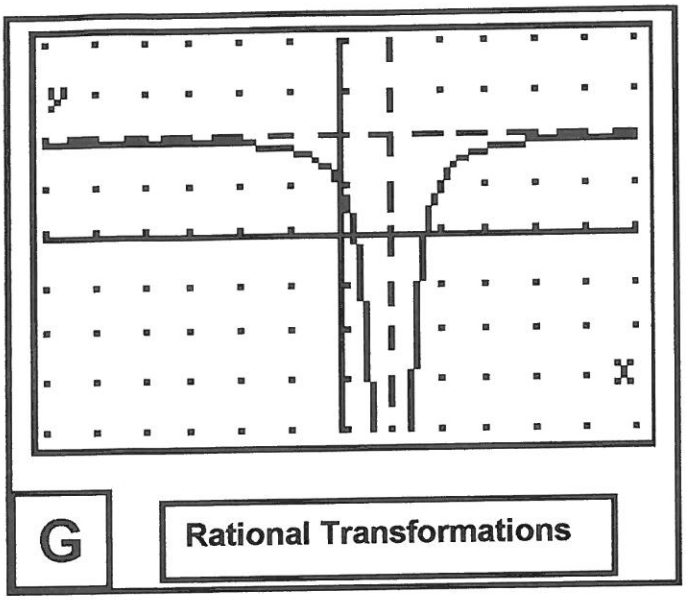
D Rational Transformations



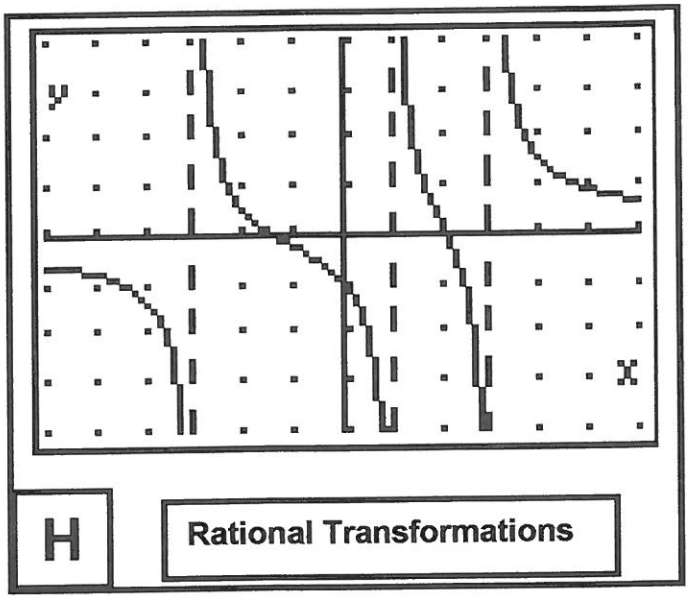
E Rational Transformations



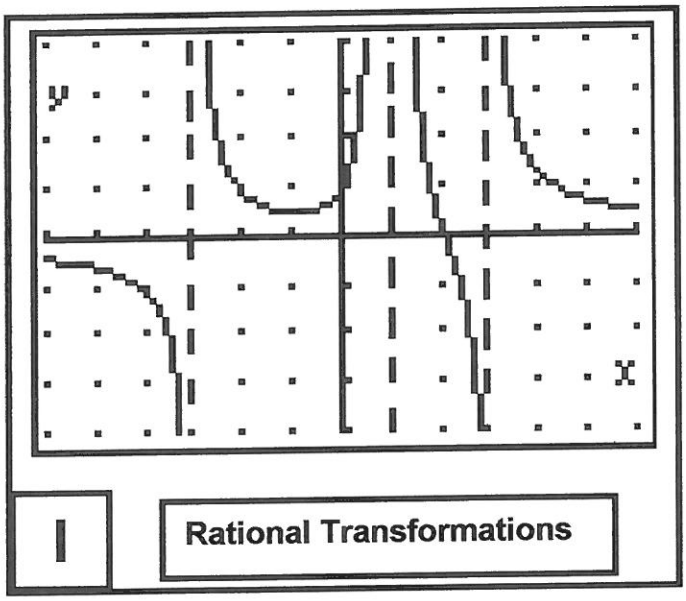
F Rational Transformations



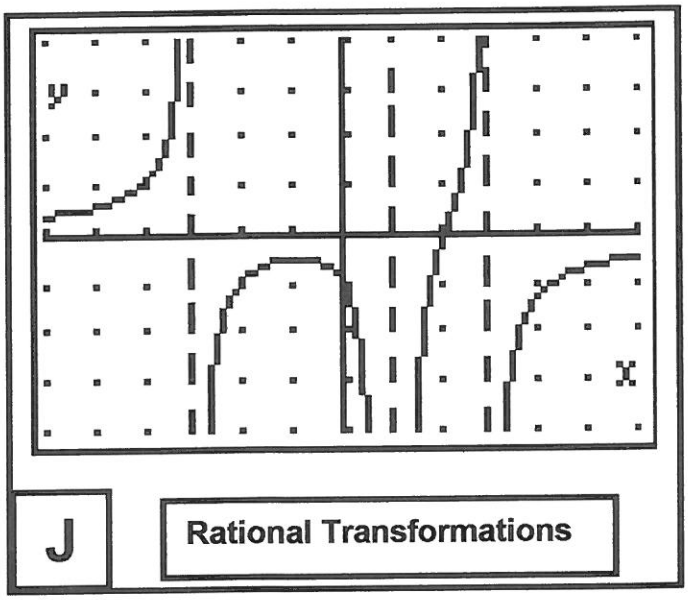
G Rational Transformations



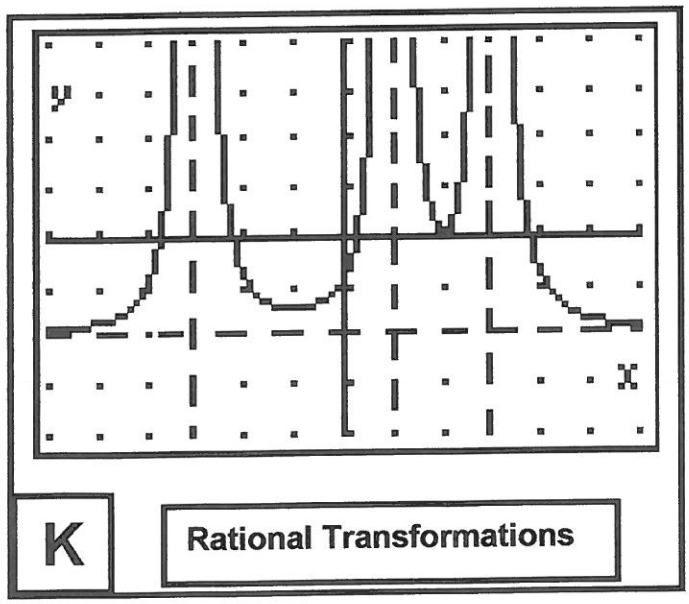
H Rational Transformations



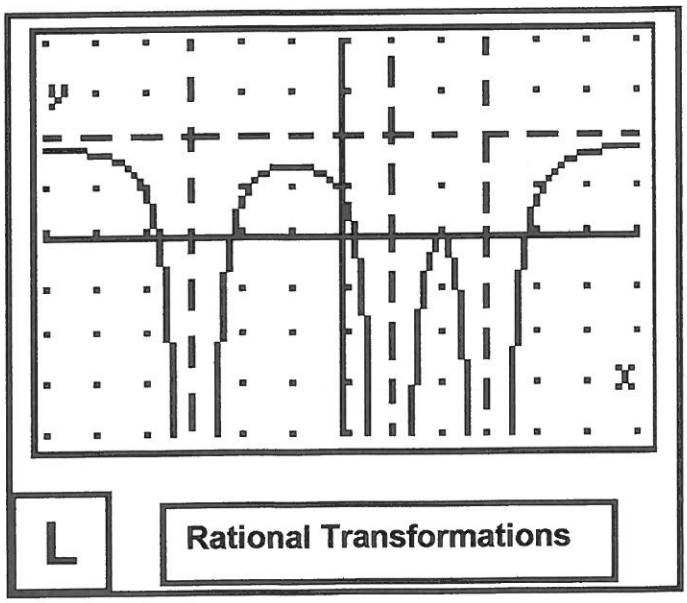
I Rational Transformations



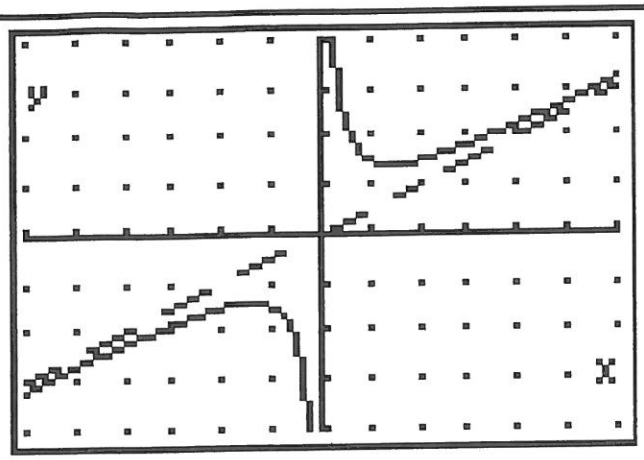
J Rational Transformations



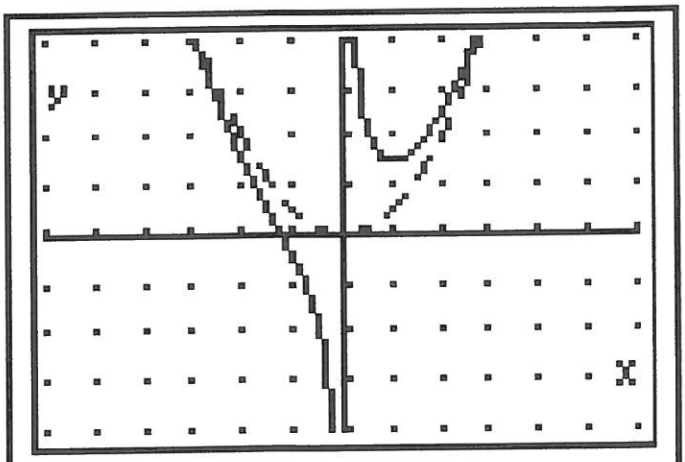
K Rational Transformations



L Rational Transformations



M Rational Transformations



N Rational Transformations

9 Rational Transformations

$$g(x)=\frac{2+x^2}{2x}=\frac{1}{x}+\frac{x}{2}$$

5 Rational Transformations

$$g(x)=\frac{2+x^3}{2x}=\frac{1}{x}+\frac{x^2}{2}$$

T Rational Transformations

- VA: x=0
- HA: none
- EBM: y=x/2
- OA: y=x/2

P Rational Transformations

- VA: x=0
- HA: none
- EBM: $y=x^2/2$
- OA: $y=x^2/2$

EE — Rational Transformations

- VA: x=1
- HA: y=2
- EBM: y=2
- OA: none

Z — Rational Transformations

- VA: x=-3, x=1, x=3
- HA: y=0
- EBM: y=0
- OA: none

DD — Rational Transformations

- VA: x=-3,x=1,x=3
- HA: y=0
- EBM: y=0
- OA: none

$\text{As } x \to 1^-,\ y \to \infty$

$\text{As } x \to 1^+,\ y \to \infty$

FF — Rational Transformations

- VA: x=-3,x=1,x=3
- HA: y=0
- EBM: y=0
- OA: none

$\text{As } x \to 1^-,\ y \to -\infty$

$\text{As } x \to 1^+,\ y \to -\infty$

Y — Rational Transformations

- VA: x=-3,x=1,x=3
- HA: y=-2
- EBM: y=-2
- OA: none

$\text{As } x \to 3^-,\ y \to \infty$

$\text{As } x \to 3^+,\ y \to \infty$

S — Rational Transformations

- VA: x=-3,x=1,x=3
- HA: y=2
- EBM: y=2
- OA: none

$\text{As } x \to 3^-,\ y \to -\infty$

$\text{As } x \to 3^+,\ y \to -\infty$

O — Rational Transformations

Asymptotes:
- Vertical: x=0
- Horizontal: y=0
- End Behavior Model: y=0
- Oblique: none

W — Rational Transformations

- VA: x=3
- HA: y=0
- EBM: y=0
- OA: none

CC — Rational Transformations

- VA: x=-2
- HA: y=-1
- EBM: y=-1
- OA: none

Q — Rational Transformations

- VA: x=-3, x=2
- HA: y=0
- EBM: y=0
- OA: none

U — Rational Transformations

- VA: x=-1, x=2
- HA: y=1
- EBM: y=1
- OA: none

X — Rational Transformations

- VA: x=0
- HA: y=0
- EBM: y=0
- OA: none

1 **Rational Transformations**

$$f(x) = \frac{1}{x}$$

10 **Rational Transformations**

$$g(x) = \frac{1}{(x-3)}$$

13 **Rational Transformations**

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

4 **Rational Transformations**

$$g(x) = \frac{1}{(x+3)} + \frac{1}{(x-2)}$$

6 **Rational Transformations**

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

11 **Rational Transformations**

$$g(x) = \frac{1}{x^2}$$

2 **Rational Transformations**

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

15 **Rational Transformations**

$$g(x) = \frac{1}{(x-3)} + \frac{1}{(x-1)} + \frac{1}{(x+3)}$$

14 **Rational Transformations**

$$g(x) = \frac{1}{(x-3)} + \frac{1}{(x-1)^2} + \frac{1}{(x+3)}$$

7 **Rational Transformations**

$$g(x) = \frac{-1}{(x-3)} + \frac{-1}{(x-1)^2} + \frac{-1}{(x+3)}$$

12 **Rational Transformations**

$$g(x) = \frac{1}{(x-3)^2} + \frac{1}{(x-1)^2} + \frac{1}{(x+3)^2} - 2$$

16 **Rational Transformations**

$$g(x) = \frac{-1}{(x-3)^2} + \frac{-1}{(x-1)^2} + \frac{-1}{(x+3)^2} + 2$$

NAME_____
NAME_____
NAME_____
NAME_____

TABLE

ANSWER KEY

Rational Transformations

Graph	A	B	C	D	E	F	G	H
Function								
Asymptotes EBM – Holes								

Graph	I	J	K	L	M	N	AA	BB
Function								
Asymptotes EBM – Holes								

NAME_____
NAME_____
NAME_____
NAME_____

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Function								
Asymptotes EBM – Holes								

Graph	I	J	K	L	M	N	AA	BB
Function								
Asymptotes EBM – Holes								

ANSWER KEY — Rational Transformations

Graph	A	B	C	D	E	F	G	H
Function	1	10	13	4	6	11	2	15
Asymptotes EBM – Holes	O/x	W	CC	Q	U	X/o	EE	Z

Graph	I	J	K	L	M	N	AA	BB
Function	14	7	12	16	9	5	8	3
Asymptotes EBM – Holes	DD	FF	Y	S	T	P	V	R