

Matching Exponents (A version of Go Fish!)

Topic: Simplifying expressions containing integral exponents

Grade Level: Algebra 1

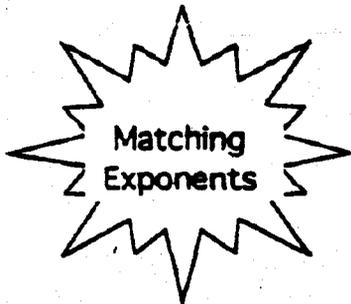
Number of players: 3 - 5

Materials needed: One set of "Matching Exponents" cards

Procedure:

- Shuffle the cards and deal 8 cards to each player. The remainder of the cards are placed face down in a "Go Fish!" pile. Each player makes as many pairs as he/she can, matching an unsimplified expression with its simplification. These pairs are placed face up on the table so that they can be seen.
- After all the pairs are finished, each player draws three cards from the player on his/her left. If any pairs can be made with the new cards, these are placed on the table.
- When play begins, the first player asks another player in the group for a card. The asking player must specify by name the player that is being asked and must ask for the simplified version of the expression regardless of the card he/she has in her hand, i.e., "Mary, may I have x^2 ?" even if the card the asker has in his/her hand is $1/x^2$.
- If the player that has been asked has the card, he/she must give it up. Otherwise the asking player is told to, "Go Fish!". The asking player must then draw a card from the pile and play passes to the next person. /
- If the asking player receives the card asked for, he/she puts the pair on the table and takes another turn. Play continues until all of the players are out of cards in their hands. As a player empties his hand he/she drops out until the next hand.
- The player with the most books is the winner.

$$5x^2(x^3) =$$



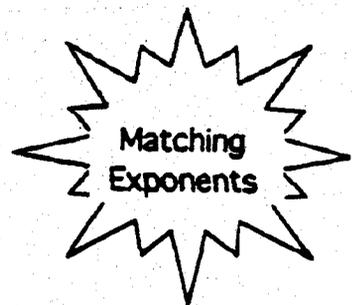
$$= (5x^2)(x^3)$$

$$4x^3(2x) =$$



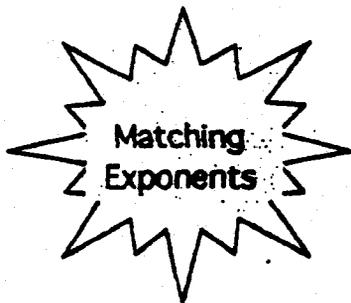
$$= (4x^3)(2x)$$

$$3x^2(2x^3) =$$



$$= (3x^2)(2x^3)$$

$$-2x^2(2x^3) =$$



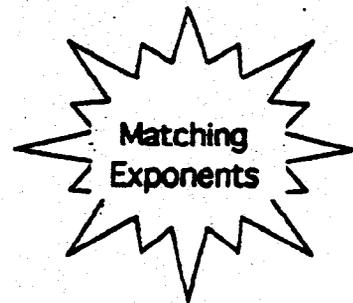
$$= (-2x^2)(2x^3)$$

$$5x(x^3 + 4) =$$



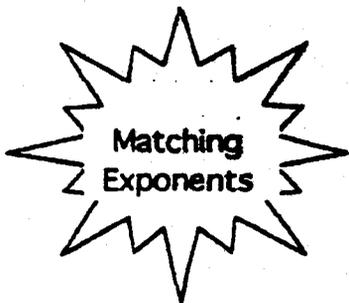
$$= (5x)(x^3 + 4)$$

$$-2x^2(x^4 + 3) =$$



$$= (-2x^2)(x^4 + 3)$$

$$2x^{-2}(3x^3) =$$



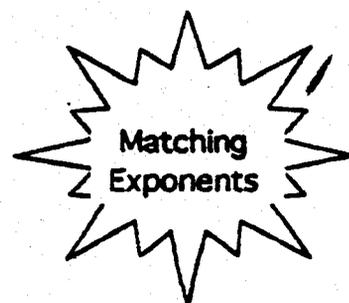
$$= (2x^{-2})(3x^3)$$

$$x^{-3}(4x^2) =$$



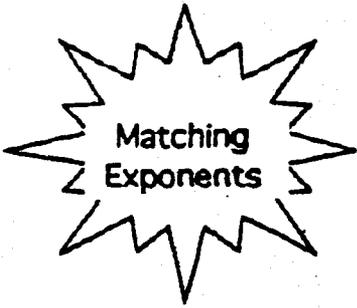
$$= (x^{-3})(4x^2)$$

$$2x^{-2}(5x^4) =$$



$$= (2x^{-2})(5x^4)$$

$$(3x)^2 =$$



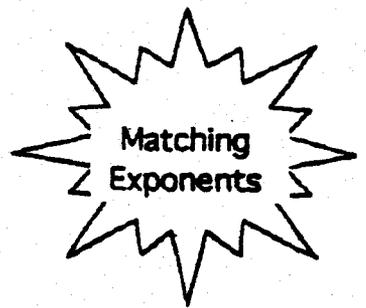
$$= 2(3x)$$

$$(2x^3)^2 =$$



$$= 2(x^3)^2$$

$$(x^4)^2 =$$



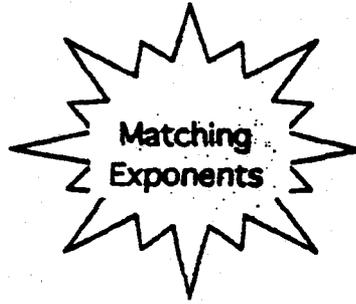
$$= 2(x^4)$$

$$(3x^2)^2 =$$



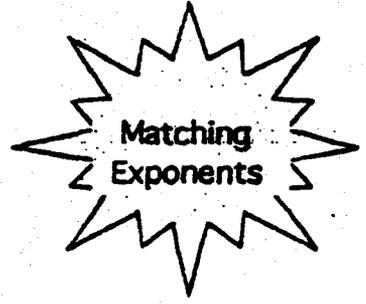
$$= 2(3x^2)$$

$$(x^2 y)^2 =$$



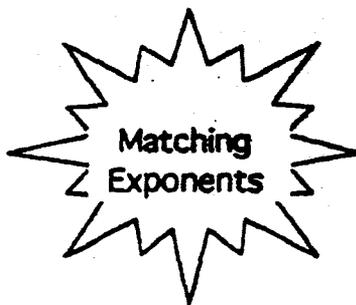
$$= 2(y^2 x^2)$$

$$(2x^3 y^4)^2 =$$



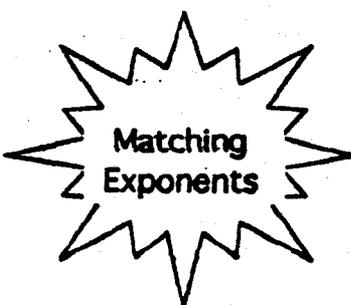
$$= 2(x^3 y^4)$$

$$(4x^2)^3 =$$



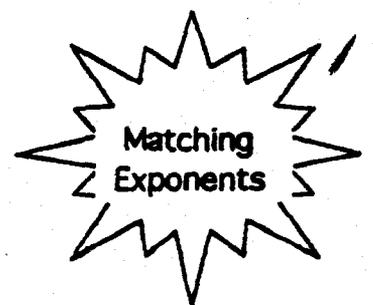
$$= 3(4x^2)$$

$$(x^{-2}) =$$



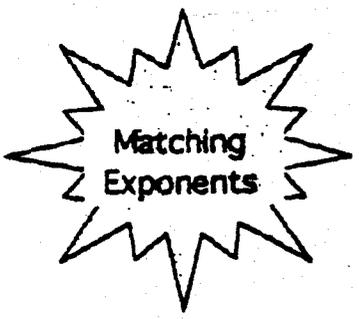
$$= (x)^{-2}$$

$$(3x)^{-2} =$$



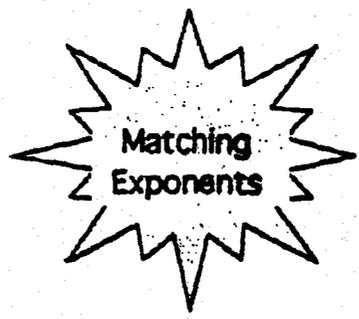
$$= -2(3x)$$

$$\frac{x^6}{x^2} =$$



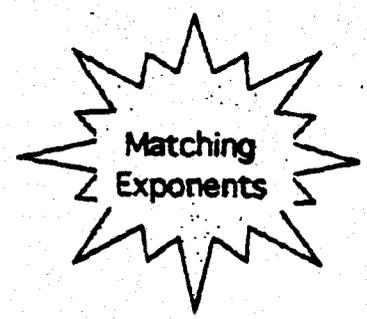
$$= \frac{x^2}{x^6}$$

$$\frac{2x^5}{x^2} =$$



$$= \frac{2x^2}{x^5}$$

$$\frac{3x^6}{x^3} =$$



$$= \frac{x^3}{3x^6}$$

$$\frac{10x^3}{5x^2} =$$



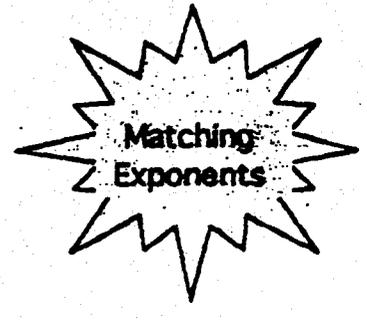
$$= \frac{10x^3}{5x^2}$$

$$\frac{x^4}{x^{-2}} =$$



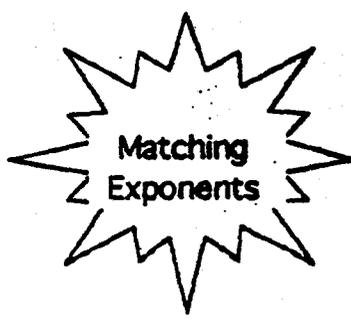
$$= \frac{x^4}{x^{-2}}$$

$$\frac{9x^7}{3x^2} =$$



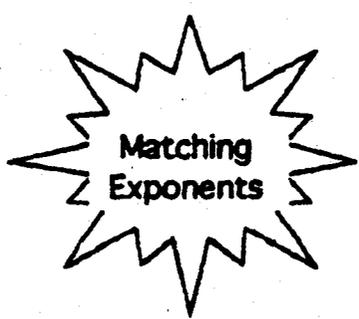
$$= \frac{9x^7}{3x^2}$$

$$\frac{x^{-2}}{x^6} =$$



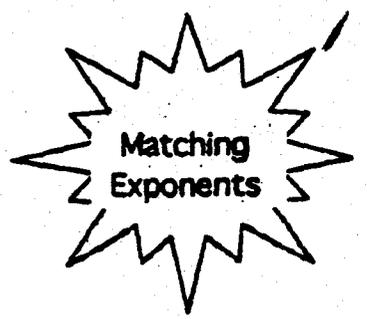
$$= \frac{x^6}{x^{-2}}$$

$$\frac{9-x}{9-x} =$$



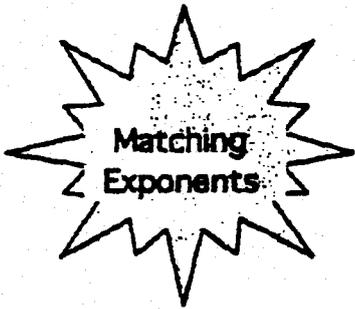
$$= \frac{x-3}{x-6}$$

$$\frac{9-x}{x-2} =$$



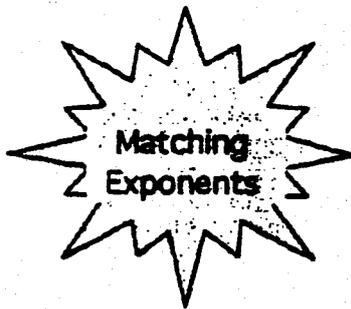
$$= \frac{x-6}{x-2}$$

x^4



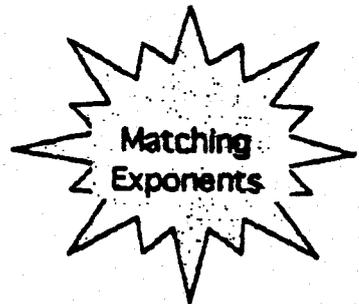
x^4

$2x^3$



$2x^3$

$3x^3$



$3x^3$

$2x$



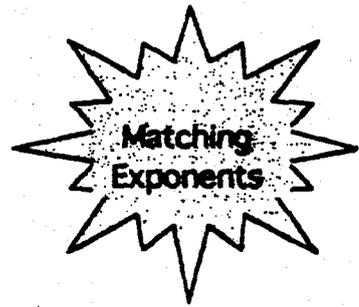
$2x$

x^6



x^6

$3x^5$



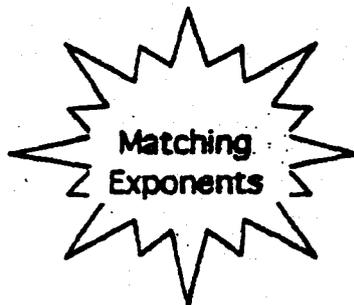
$3x^5$

$\frac{1}{x^8}$



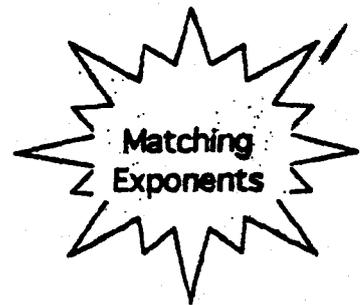
$\frac{1}{x^8}$

$\frac{1}{x^3}$



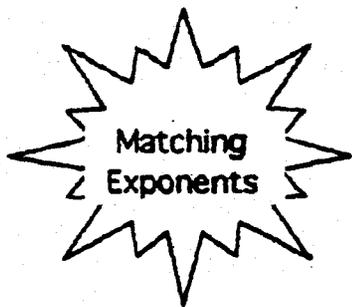
$\frac{1}{x^3}$

$\frac{1}{x^4}$



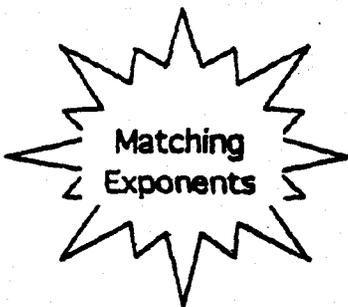
$\frac{1}{x^4}$

9×2



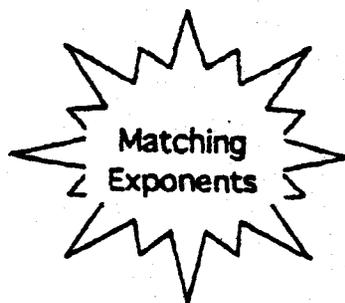
2×9

4×6



6×4

$x \times 8$



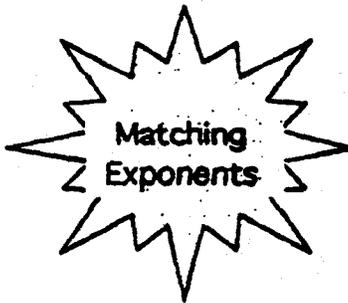
$8 \times x$

9×4



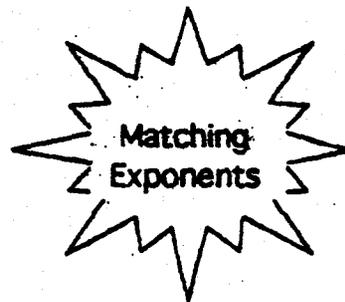
4×9

$x \times 4 \times y \times 2$



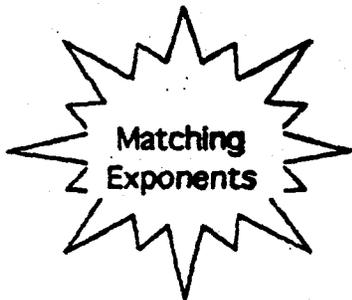
$2 \times y \times 4 \times x$

$4 \times 6 \times y \times 8$



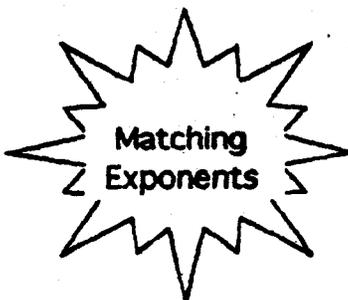
$8 \times y \times 6 \times 4$

64×9



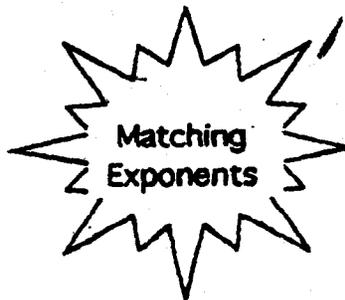
9×64

$\frac{1}{x \times 2}$



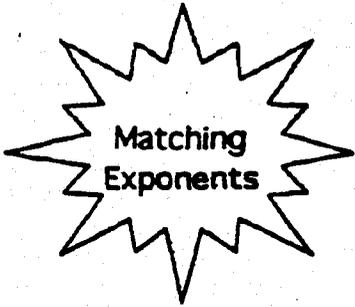
$\frac{1}{2 \times x}$

$\frac{1}{9 \times 2}$



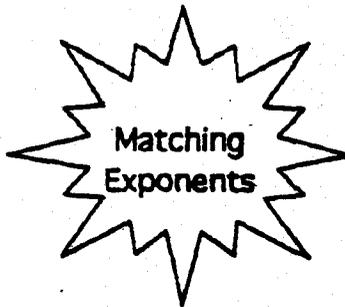
$\frac{1}{2 \times 9}$

5×5



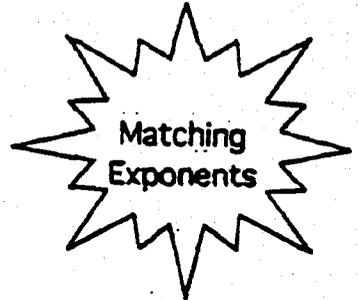
5×5

8×4



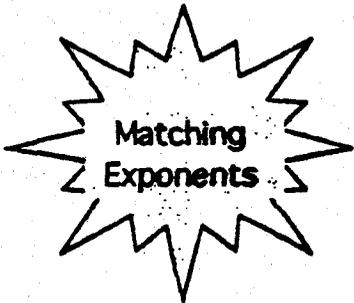
8×4

6×5



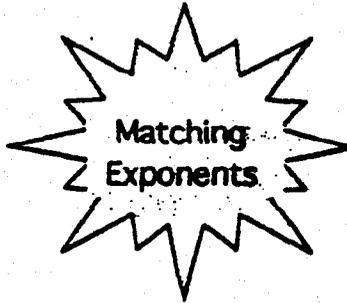
6×5

-4×5



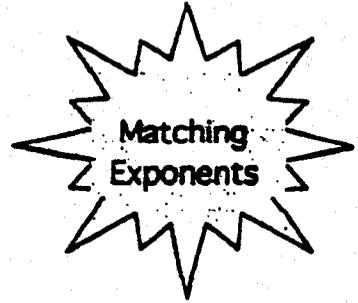
-4×5

$5 \times 4 + 20x$



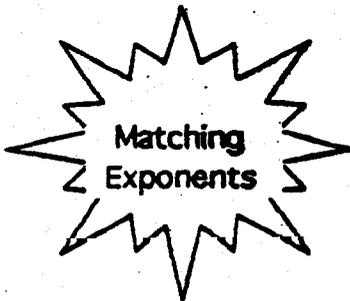
$5 \times 4 + 20x$

$-2 \times 6 - 6 \times 2$



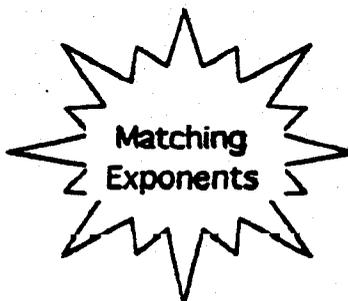
$-2 \times 6 - 6 \times 2$

6×9



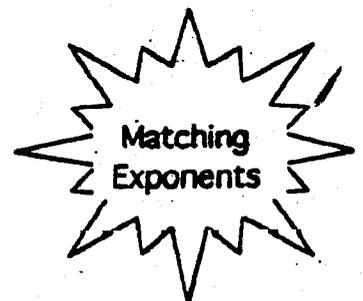
6×9

$\frac{4}{x}$



$\frac{4}{x}$

10×2



10×2